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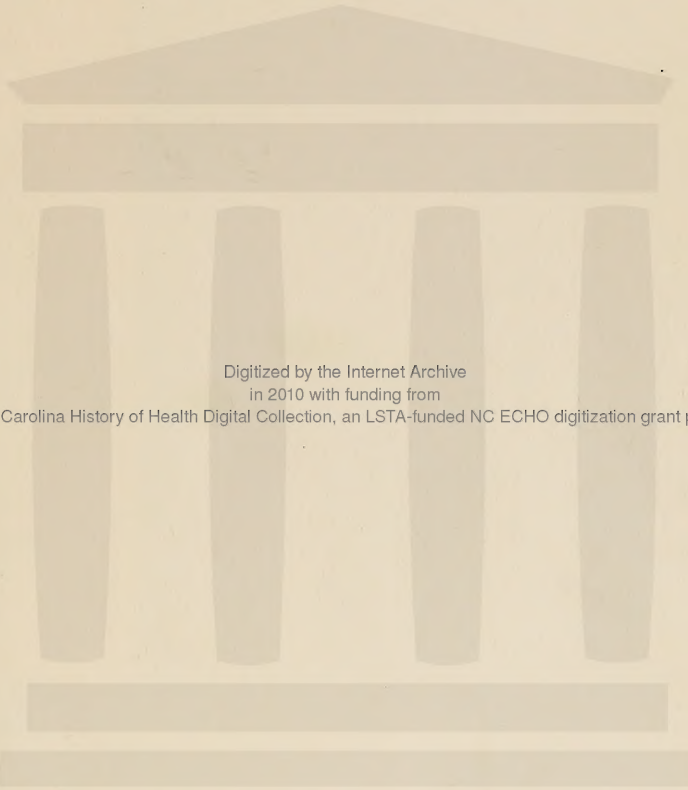
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JAMES M. NORTHINGTON, M. D., Editor

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No. 1

A Concept of Anxiety

J. G. N. CUSHING, M. D., Pinebluff, North Carolina

FOR the most part, investigators who have dealt with the problem of anxiety have attempted to differentiate between anxiety and fear. At first it was considered purely on a physiological basis, as in Brissaud's theory that anxiety is a "neurosis of the vagus." It was in 1890 that he studied the work of Francois-Frank¹ who produced anxiety in animals by compression of the vagus. Many philosophers, too, were concerned with defining and differentiating anxiety and fear. One of these who was most prominently concerned with this was Pascal, who felt that anxiety was a forerunner of fear—finally building up to a climax of fear. Spinoza and Heidegger considered fear as something tangible to the mind and anxiety as dealing with "nothingness." However, in considering this question of differentiation it would be too burdensome to quote every worker, so we will skip both years and theories.

Freud was the most prominent of the latter-day psychiatrists to be concerned with the question. In some of his early papers he demarcated anxiety neuroses, or *angstneurose*, from neurasthenia as a secondary variety of "actual neurosis." At the same time he emphasized that anxiety, in contradistinction to fear, is characterized by a feeling of hopelessness toward danger. Amongst our contemporaries, Goldstein, in presenting his holistic concepts, has stated that fear is led to by the "experience of the possibility of the concept of anxiety." It is, of course, quite obvious to the unbiased observer of human life that anxiety and fear cannot be the same thing, although at times they may produce the same subjective phenomena. Nor can we agree that anxiety is the forerunner of

fear, although viewed from the purely superficial aspect this would seem to be a logical concept. That anxiety deals with nothingness, of course, is to the modern mind not only unproven but unprovable, and highly unscientific. Even looking at it in a detached manner it is difficult for me to picture fear as being a situation in which one fears anxiety.

A human being is a stratification of entities—a phylogenetic representation within one frame. At last we appear to have come, despite ages of philosophical thinking, to the point of believing that there is no dichotomy of mind and body. For this reason we believe that one cannot observe an isolated reaction of a patient and analyze it into its elements without also considering it as the reaction of the total personality. This leads to much difficulty in psychiatric thinking because of the implications accompanying each symptom.

It is quite obvious, even to the untrained observer, that there is not only a mental equation concerned in the states of fear and anxiety, but also a physical concomitant. One of the most prominent of these is the release of adrenalin during these states which we are discussing. It is well known that adrenalin acts on the neuro-muscular endplates of the sympathetic nervous system and produces the same effect as electrical stimulation would, except upon the pilomotor muscles and sweat glands. Adrenalin will not cause sweating. Adrenalin mobilizes glucose by releasing it from its storehouse in the liver where it exists as glycogen, thereby increasing the sugar content of the blood. It diminishes muscular fatigue and checks secretion of the digestive glands. It causes tachycardia,

increase in the cardiac action, anemia of the gastrointestinal and respiratory tracts and rise in blood pressure. Thyroxin stimulates the adrenal and adrenalin stimulates the sympathetic system, and the thyroid in turn is stimulated by the sympathetic. By virtue of this complicated procedure we see some of these prominent distortions of the organism in states of fear and anxiety as tachycardia, palpitation and shortness of breath. As the degree of emotion becomes stronger, other symptoms will develop such as dizziness, unsteadiness, the vasomotor skin reactions with hot and cold sensations, difficulty in focussing as blurred vision, frequency and urgency of urination, etc. When these states become more jelled they are spoken of by the psychiatrist as a neurosis. They frequently manifest other symptoms such as sexual stimulation, even to orgasm, with or without erection, an increase in the metabolic rate, impulsive yawning, and apparently causeless sleepiness. It is to be noted that the symptoms which may be caused by fear are usually understood by the victim and will disappear when the palpable cause of the fear no longer concerns the individual. However, if an impalpable cause threatens an individual, these symptoms or variations of them will appear and will remain until the organism arrives at an understanding of the basic cause. In other words it is believed by some of us that the difference between fear and anxiety lies, not in the physiological reactions, but in the differentiation between the palpable (consciously acceptable) and impalpable (consciously unacceptable) object.

Anatomically it is believed by some that fear is an emotion of subcortical source and that anxiety is a neocortical function. This assumption is based on some studies made by Bard at the Johns Hopkins University School of Medicine* in which he removed the neocortex, much of the rhinencephalon and most of the striatum in cats. The animals so treated showed fear reactions, even to the point of acute terror, to certain auditory stimuli. We may then say that fear is an emotion concerning a danger which is consciously acceptable and can be prehended by the cortex. However, one need not have an intact cortex to experience fear: it can be recognized by some subcortical region. In the decorticate animal danger is recognized and translated immediately into a fear reaction; in the cortically intact animal the danger is also recognized and may be feared, but the reactions to that fear are controlled by the higher centres.

Now, it would appear that fear connotes a certain amount of experience regarding the object—we do not fear the sudden blast of a steam whistle because we know from experience that it can do us no harm. However, a baby or person who has never previously heard a siren, or an animal which

is decorticate, will exhibit symptoms of fear. If an infant or a lad who has never previously heard a siren becomes accustomed to hearing one sounded daily, he discovers that it will do him no harm and he will then cease to exhibit symptoms of fear. This can be rather readily pictured in a modern-day experience if we are to believe the press reports we get from London and other bombed areas that people in the attacked areas become nightly accustomed to hearing the sirens and, although there is potential danger present, they become so familiar with this danger that they no longer exhibit fear of the bombing nor fear when the siren is sounded. This is even carried to the extent that many will avoid the A.R.P. workers and run into doorways or on the roofs of houses to watch the attacking planes.

These persons who are frequently disturbed by a siren gradually become accustomed to it, realizing that there is no danger in the sound itself. But they may never get too near the source of the sound because of another fear that there may be one chance in a million that the steam whistle may blow up and hurt them. This latter is described as a reaction of "controlled fear" which will have none of the concomitant physiological reactions which were present the first time the siren was heard. A decorticate animal will never have the power of learning this secondary controlled fear because it does not have the storehouse of experience with other objects, nor can it learn to be accustomed to the sound, for the same reason; and it will display all the physiological reactions every time the siren is sounded in its vicinity.

Anxiety will have the same physiological reactions, but its object will be different in that it cannot be prehended by the individual; furthermore the object will be unacceptable to the consciousness. Hence this is a reaction to an unapprehended threat to the individual's security and as such will produce the symptoms outlined above in varying degree. The degree of the anxiety will depend upon the security which the individual has attained in life and the degree of the threat implied.

Since we have brought up the concept of security, it must have some sort of definition. It can be pictured as that assurance or certainty that human beings have concerning a personal universe of which each individual is the center. This personalized universe comprises within it all the activities of the human being—the physiological actions such as eating, breathing, sleeping, moving, etc.; the environmental stresses and supports as finances, working, playing, etc.; and the emotional factors as love, sorrow, fear, hate, etc. This universe differs from our solar system in this wise: It has a beginning and an ending—birth and death.

While according to Jean's theory our universe is practically limitless and theoretically merges only with outer universes, this personalized universe is bounded on two ends by birth and death, and the circumference is limited by the environmental contacts which that individual makes. To the central individual of this little solar system everything will be certain or sure as long as the gravitational equations between the central point and each of its actions or reactions remains at an optimum. Once the delicate balance of this mechanism is disturbed, there is a distinct threat that the whole system may be disrupted. This threat of disruption may be actual or potential and impalpable, in which case it will be recognized by the consciousness of the central individual. The reaction of this person to the threat will depend on the amount of experience and/or knowledge concerned with that particular kind of danger, or it may be impalpable and potential, in which case it will not be recognized by the consciousness but will be unconsciously accepted.

Let us now bring this personalized universe down to the size of a ping-pong ball. This ball is kept in its spherical shape by certain stresses and strains, both internal and external. The internal strains may be likened to the emotional factors and gravitational forces mentioned above in our personalized universe, and the external stresses to the environmental pressures. As long as the gravitational forces of the universe are maintained in balance the security of that universe is kept whole. As long as the external stresses and strains of the ping-pong ball are kept in balance with those inside the ball, its spherical shape or security is kept whole and hence its performance is at an optimum. Now, suppose that this ball suffers a dent against the corner of the table—its shape is then ruined and it can no longer bounce in the direction which we originally intended, but instead will proceed at a tangent.

In our personalized universe we are slammed and bounced around much as the ping-pong ball, but as long as our gravitational balances between the various elements of that universe are maintained, our security suffers no more harm than does the ping-pong ball during the course of an ordinary game. Although during that game there are many threats to the security. We may then hit a sharp corner, which produces a threat to our security and sets out of line those gravitational balances which maintained it. This is then what we term an anxiety neurosis or anxiety tension state, and is simply a jelling of those symptoms or distortions of the organism which we have mentioned.

Every individual suffers consciously non-acceptable threats to his security which produce momentary anxiety states. But when such a threat be-

comes great and appears to be an actuality, but still consciously non-acceptable, we have the anxiety tension state. Every individual maintains the balance of his personalized universe in his own peculiar manner, which he has learned by countless moments of anxiety when being slapped around by life, much as the ping-pong ball is slapped around between two players. For a person of the narcissistic type, whose safety rests on being appreciated and admired, the vital danger is that of losing admiration. In him anxiety may appear if he finds himself in an environment which does not recognize him. If the individual's safety rests on merging with others, anxiety may arise if he is alone. If a person's safety rests on being unobtrusive, anxiety may emerge if he is in the lime-light, and so on. These symptoms of anxiety are solutions to problems posed to the organism in its attempt to maintain the balance of its security.

To see if this theory fits the fact, let us consider the case of a twenty-five-year-old married woman who came to us complaining of dizzy spells and headaches. The dizzy spells had begun three years previously in a setting of disappointment over a love affair and her first trip to New York. They were aggravated by her engagement and wedding plans. After marriage they gave way to nightmares and finally returned, accompanied by headaches, eight months previous to this consultation. They always occurred in times of emotional stress. She had been to many physicians and had had several procedures carried out in hopes of hitting on something that would stop the pain.

It is to be noted that this young lady started out in life with a good deal of security—she was born the daughter of the most prominent man in a small town. Her early life was hedged by various securing factors—money, position and good health. At the age of six her mother died and as a result she was pampered, for everyone felt they should do all they could to make up for the loss of her mother. This was her first experience with real insecurity, and it is seen that she was helped over this hurdle by her five older siblings and father through the medium of pampering. Two years later her father married a friend of his first wife, of whom the patient was quite fond, and whom she regarded as a mother, which also helped to readjust the imbalance caused by her first insecurity.

When the patient was thirteen the family moved to a large town where she had great difficulty in making new friends and in relinquishing the position of a member of the town's first family. She responded to this second buffet of insecurity by feeling uncomfortable, especially in crowds. She readjusted to this and was just well established in the social group she coveted when she went to

college. Here she was again insecure, first because of some of the comments that she had her grades because of her father's position as legal advisor to the University, and, secondly because she did not get bid to the sorority that she had set her heart on. Nonetheless, she was reasonably happy and popular in college and went to many of the dances. She went out with various boys but was only seriously interested in one before her engagement to her present husband. This interest centered about a young interne to whom she considered herself practically engaged when he shifted his affections and married another girl in the spring of 1935. This was quite a shock to her and a staggering blow to her pride.

The patient exhibited her first definite anxiety symptoms in August 1935, when she had a "groggy sensation" while shopping in New York City. Please note that this was the forerunner of many similar sensations of dizziness, groggy feelings and head pain, and that this first attack occurred in a setting of crowds. When she had first moved to a large city her first reaction had been to feel uncomfortable in crowds.

In the fall of 1935 her father had a dizzy spell while arguing a case in court. For three years he would not rise in court or lecture hall for fear of a recurrence of a dizzy spell, although he was otherwise quite healthy. The father is extremely fond of the patient because she is the only one of his children who resembles her mother. He is quite close to her and the bonds of affection between them are very strong. The following spring the patient began going steadily with her present husband and their engagement was announced in January, 1937. During this time the patient worried a great deal about her father's health and was much concerned that he was unable to rise to plead his cases in court, but did so sitting down. Here again we can tie some of the pieces together. The patient added to the insecurity caused by a suitor's rejection the possibility of her father's demise in the near future. She responded in two ways—by an increase in the symptoms of dizziness and grogginess, and by trying to compensate and secure her future through the announcement of her engagement.

The day following the announcement the patient was very anxious, for although she felt certain that she wished to marry the boy, she was conscious of the unfortunate marriages of both her sisters and anxious for her father's approval—a quite understandable anxiety in that setting. The couple began having sex relations previous to marriage, and while she was shopping for her trousseau she had frequent groggy spells. The wedding took place in June, 1937. The patient was very tense and anx-

ious before the ceremony and has little recollection of it. Again a quite understandable anxiety in one facing a life with an individual who is practically unknown to her.

Her dizziness stopped after marriage but she began having nightmares. The cessation of the dizziness was probably due to her feeling of tangible security, but its sublimation to the form of dreams shows that the security was unconsciously not acceptable. In September the patient missed a period, was thought to be pregnant, took ergot and her periods returned. Neither she nor her husband wanted children their first year of marriage.

The following December she developed a stabbing pain behind her right eye. Then began a series of visits to ENT men and internists with the resulting administration of analgesics, extraction of a wisdom tooth, and injections of the sphenopalatine ganglion. During this time her husband made business trips on which she accompanied him. It was noted on these trips that the pain was aggravated by talking to strangers, particularly while they were in the larger cities. Finally she saw a neurologist, had a thorough study, and was referred for psychiatric consultation.

In working with the patient it was found that she had a fear of being alone as a result of thwarted social ambitions and feelings of inadequacy because of difficulties in making friends in the city to which she had moved from a small town: her second contact with insecurity and one to which she had responded by being uncomfortable in crowds. She then had difficulty in attaining prominence socially in college as measured by sorority standing. Then the strength of her attachment to her father and the determination to marry a man he approved of at any cost. The indecisions and difficulties encountered in this coupled with the rejection by her suitor started her off on her first marked anxiety symptoms which closely patterned those of her father's illness. Later a connection was found between the disappearances of her symptoms while her husband was with her and their reappearance when alone, for she wanted all his attention and found it hard to share him with his work.

Here we see that the patient tried to readjust the balances of her personal universe. She reacted with anxiety to the rejection by the first boy, her symptoms then patterned after her father's with imminence of the possibility of his death. Later came her resolution to find new security in a husband who was approved of by her father, the basis of her former security. The various possibilities she had staring her in the face considering her sisters' unfortunate marriages made this new security appear a bit dubious. The dubiousness of the security furnished by her marriage was heightened

when she found that her husband could not give his entire attention to her. This was when she received the final blow which upset the balance of her universe and set her symptoms in the pattern of an anxiety tension state, much as the ping-pong ball is dented by the corner of the table.

The patient had a thorough study of her physical status, a refractive error was corrected and the causal relationships of emotional stress and symptoms were worked out with her. She developed excellent insight and was discharged improved.

The imbalances of internal and external stresses and strains were set aright so that the patient was again a functioning and balanced whole.

The diagnosis here was that of an anxiety tension state with hypochondriasis. It is my belief that every case of so-called hypochondriasis can eventually be traced back to anxiety, albeit at times with a great deal of effort and time. If the cause of the anxiety can then be determined and the patient be brought to an understanding of them, these hypochondriacal symptoms of anxiety can be obviated or at least so alleviated that the patient will be more comfortable in their presence, the balance of security being restored.

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WHAT'S WRONG WITH THE PATIENT WHO IS ALWAYS TIRED?

(W. C. Alvarez, Rochester, Minn., in *Minn. Med.*, Nov.)

Every week I see a number of patients whose main complaint is that the least exertion makes them feel worn out.

When the failure in strength and energy and the loss of a sense of well-being come to a man or woman past middle age who has previously enjoyed good health, the physician must hunt for carcinoma, pernicious anemia, hypothyroidism, hypertension, diabetes, or a failing heart or kidney.

If the fatigue and loss of interest in life come suddenly in a person past middle age, the cause is almost certainly a small stroke. It is rare for a physician to think of this possibility when the thrombosis does happen to involve the centers for speech or for arm or leg. Commonly the episode is thought to be due to an "acute indigestion" because it is so often associated with dizziness, vomiting and abdominal discomfort. Sometimes close questioning will bring out several of these small episodes, which are especially apt to occur in the morning when the patient wakes. There is likely to be some loss of memory, a loss of interest and zest in life. The story must be dug out. It is useless to try to help the patient or to cheer

him up. His brain is injured.

Often the fatigue state has followed an influenza, suggesting a mild encephalitis. Mild generalized arthritis or fibrositis is more common the patient aching all over, and with this having a feeling of fatigue and toxicity.

In the case of college students, vague ill health with indigestion and feelings of fatigue should suggest subacute appendicitis.

In many cases nothing is found on thorough examination. Then the physician must be careful not to grasp at diagnostic straws. Then he must see if the patient has had strain, unhappiness, sorrow or insomnia to account for the situation. In many cases, with or without strain, a person with a psychopathic inheritance breaks down. It is unfortunate that mild melancholia is today rarely recognized by clinicians.

THE FIBROID UTERUS

(E. D. Plass, Iowa City, in *Jl Mo. Med. Asso.*, Jan.)

One out of 5 women in late sexual life has larger or smaller fibroids, composed of varying proportions of fibrous tissue and smooth muscle. A small tumor with a high proportion of muscle tissue will grow rapidly during gestation and will atrophy with even greater rapidity after delivery; predominantly fibrous tumors are subject to less marked changes in size.

Because of the commonly inadequate blood supply, the fibroid nodules are frequently edematous and may show some type of degeneration.

The most common manifestations are uterine bleeding, pressure complaints, obstetric difficulties, leukorrhea and general symptoms.

In the presence of adhesions to neighboring organs, intermittent "stretching" pain may ensue. Acute discomfort suggests the torsion of the pedicle of a subserous nodule or of "red" degeneration with some elevation of t. and leukocytosis.

When a tumor is symmetrical, and especially when it is soft, pregnancy must be considered; the biologic pregnancy tests should be utilized.

In general symptomless tumors need no treatment; they probably will regress or disappear after the menopause. Medical treatment usually is ineffective although the exhibition of oxytocic drugs (pituitrin or ergot) may be effective temporarily in controlling excessive bleeding and calcium may have some value. Anemia from bleeding requires adequate diet with plenty of protein, with some form of iron and vitamin B.

Radiation by roentgen ray is useful in women near the menopause who have relatively small tumors not pedunculated, not larger than a 3-months pregnancy. In any event, curettage should precede the irradiation in order to eliminate the possibility of malignant disease.

Myomectomy is indicated in young women who wish to retain their childbearing functions. There is always a considerable chance that additional fibroids will appear later and demand a second operation.

Vaginal hysterectomy in general is not so satisfactory as the abdominal operation. The operation is more suitable for the removal of small tumors, which ordinarily do not produce symptoms indicating treatment of any sort.

DIABETES

(C. M. MacBryde, St. Louis, in *Jl Mo. Med. Asso.*, Jan.)

The physician should: 1) fit the diet to the patient using low-moderate- or high-carbohydrate—whichever leads to maximum carbohydrate tolerance; 2) strive to utilize more efficiently the new slow-acting insulin.

Surgery in Diabetes*

GEORGE T. TYLER, JR., A. M., M. D., Greenville, South Carolina

DIABETES is an error in metabolism, due chiefly to lack of insulin. It has been known since ancient times. Digestion converts the disaccharides—cane sugar and milk sugar; and the polysaccharides—the starches—into monosaccharides—dextrose, levulose and galactose, which by dehydration become glycogen— $C_6H_{12}O_5 \cdot H_2O = C_6H_{10}O_5$. One third of the glycogen is stored in the liver, two thirds in the muscles. That in the liver is ready for immediate metabolic demands. Glycogen is formed also from proteins and fats; 58 per cent of proteins, and 10 per cent of fats become glucose. Normally the glucose in the blood is from .08 to .12 per cent. In diabetes the physiology is altered in the liver, the circulation (heart and blood vessels), also in the kidneys, and in the lungs.

Hepatic insufficiency is evidenced by decrease in the deposit of glycogen, with an increase in fat. The liver is enlarged. There is a desaturation of the fatty acids with increased circulating acetone, and diacetic and beta-oxybutyric acids. This means acidosis. Cholesterol is not broken down. It accumulates in the circulation, favoring the development of cholecystitis and gallstones. Gallbladder disease inhibits the function of the pancreas, with aggravation of the diabetes. With deamination of amino-acids, less urea is formed. The abnormal liver cells fail to destroy bacteria and toxins.

Heart and blood-vessel changes, including coronary sclerosis, are common. From 33 to 52 per cent of diabetics have coronary sclerosis of some degree. The myocardium is weakened. It is common knowledge that diabetics have a marked tendency to arteriosclerosis. Few altogether escape arterial thickening; 71 per cent of Joslin's patients showed this degeneration. The diabetic develops it 10 years before the non-diabetic. The physiological age of a diabetic is his age in years plus the duration of his diabetes. With diminished blood supply, there is impairment of nutrition; 68 per cent of these patients have impaired circulation in the feet.

In the lungs, bronchitis, pneumonia and tuberculosis are common. The respiratory quotient is lowered. The tension of CO_2 in the alveolar air is reduced (normally 38 to 45). The kidneys are irritated by sugar, ketone bodies and uncombined organic acids. Uremia is not uncommon. There

is a decreased urea output, with albuminuria and a depletion of the stores of sodium, potassium, magnesium and calcium. With the lowering of body resistance, infection is more likely. Pus partly neutralizes the effect of insulin.

Up to 1922, diabetics were nursed. Since the discovery of insulin, they are treated. Diabetes has been named the price of obesity, since from 76 to 85 per cent of these patients are overweight. Except for the young, the average length of life of diabetics has not been increased since the use of insulin began. Formerly acidosis with resulting coma was the principal means of death. Now the surgical complications take off most diabetics.

Joslin says that the surgical diabetic is the one that dies. In three-and-a-half years, he had a mortality of 11.5 per cent in his surgical, but only 1.7 per cent in his non-surgical, cases. Hence the surgical is six times as liable to die as the non-surgical diabetic. Therefore he requires six times the care of the patient without surgical complications. From 33 to 50 per cent of diabetics acquire surgical ailments during the disease. Disease of the extremities constitutes a third of the conditions requiring operation. When infection supervenes in the limb with impaired circulation the condition is grave. If there is a blood-stream infection chance of recovery is small no matter how well the patient is treated.

I have come to regard the surgical diabetic as still a medical patient; and am unwilling to assume the sole responsibility of his care. Both before and after operation I want the internist to have charge of the patient. Only by close team-work, the surgeon playing the lesser role except in the operating room, will surgery on diabetics have a lower mortality. The statistics of the Mayo Clinic demonstrate this fact. John, of Cleveland, induced several surgeons to cooperate with him in treating these patients. Their mortality dropped to 8 and 9 per cent. One surgeon refused to join them. His mortality was 17 per cent. At the Greenville General Hospital, all diabetics on the charity service are admitted as medical patients. If surgical conditions develop, they are referred to the surgeon when they are in proper condition for operation. After operation, they are returned to the medical service, the surgeon treating the wound. This management has lessened our mortality.

Joslin has placed surgical complications in dia-

*Read before the Fourth (S. C.) District Medical Society Meeting at Spartanburg, Oct. 21st. 1940.

betes in two groups: preventable—infection, gangrene and cataract; and non-preventable—thyroid disease, appendicitis and pelvic operations. Rabbinovitz and Weismann suggest a better classification: emergency—as appendicitis, ruptured gastric ulcer, strangulated hernia; elective—as pelvic repair, hernia and thyroid operations; preventive—as cholecystectomy. Before the elective operation, tolerance should be studied by urinary response to diet. In infections operate as soon as possible. If the patient is anemic transfuse beforehand. In an emergency examine urine and blood for sugar; transfuse, or give glucose intravenously—covering with insulin, usually a double dose to combat the effect of the anesthetic. The patient must not go to the operation starved. He must be fortified by insulin, glucose, and, if possible, carbohydrate by mouth. If a transfusion is given, blood taken a few hours after a heavy meal has the effect of insulin also. The patient then requires less insulin.

Spinal or infiltration anesthesia I prefer whenever possible. Ether depletes glycogen, inhibits the secretion of bile, depresses the formation of urea, and increases the fat in the blood, tending to acidosis. Respiratory function and carbohydrate metabolism are disturbed in general anesthesia. The loss of fluid by sweating must be replaced by glucose and salt solution. After operation these solutions are given generously, with carbohydrate by mouth, as soon as possible. Urine must be examined frequently and insulin given to meet the needs. If the insulin requirement is not less in a short time, look for a pocket of pus. Have the patient out of bed as soon as possible.

Only a few of the many surgical conditions of diabetes will be discussed.

Hyperthyroidism disturbs the carbohydrate metabolism by interfering with the storage of glycogen, and by requiring an increased amount of insulin. This is in addition to the loss of carbohydrate already present. Insulin, glucose, carbohydrate and iodine are given for stabilization. The possibility of hyperthyroidism should be considered in every case of acidosis, according to Wilder. After operation, the glucose tolerance will be increased. Hyperinsulinism then must be guarded against. The diabetic with hypothyroidism is fortunate, for there is an increased glucose tolerance with need for less insulin. Rudy *et al.* report a case of diabetes not well controlled by insulin, in a young woman, and complicated by pulmonary tuberculosis. The normal thyroid was totally removed, and the basal metabolism maintained at — 25. The lung disease was arrested; the diabetes was controlled by insulin; and the patient was restored to activity.

The diagnosis of appendicitis is difficult, for it must be distinguished from acidosis. Both have nausea, vomiting, pain and leucocytosis. Fever may be present. John thinks that in acidosis the vomiting precedes pain; that in appendicitis the reverse is the case. Glucose will relieve acidosis in an hour or two. Symptoms persisting after this time probably mean appendicitis. If acidosis is present, lavage should be done.

Diabetics are prone to gallbladder disease. There is an excess of cholesterol in the system. In a series of autopsies reported by Warren, there were among 245 diabetics, 62 cases of gallstones. In 400 non-diabetic autopsies, there were 54 cases of gallstones. This is in contrast with the occurrence of 5.4 per cent of patients with gallstones among 2584 diabetics seen at the Mayo Clinic. Wilder quotes Joslin that operation for gallstones in diabetics is no more to be desired than in non-diabetics. Joslin also calls this the most favored surgical condition a diabetic can have. He thinks that early operation in cholecystitis prevents diabetes. This view was advanced in 1910 by Mayo Robson. The advice given at the Mayo Clinic to non-diabetics with cholecystitis is operation, because 1) it prevents repeated attacks; 2) it prevents cancer of the head of the pancreas; 3) it prevents diabetes. A fourth reason might well have been added: operation prevents serious liver damage. To diabetics with cholecystitis, the advice is operation when the time, place, physician and surgeon are in accord. It is common to see marked improvement, with increased glucose tolerance and lessened insulin requirement, after cholecystectomy.

Carbuncles occur oftenest about the neck. The familiar saying that "the washed neck never boils" is not entirely true; for boils occur on necks that are kept clean. Irritation from the collar, and the tendency to scratch (the monkey in us) are frequently responsible for spread of infection in this region. By way of prevention, a diabetic should not have his neck shaved when his hair is cut. In treatment, conservative measures are preferred. Wilder advises bed rest, control of the glycosuria, warm dressings wet with a solution of equal parts of 50 per cent alcohol and saturated solution of boric acid. Methenamine intravenously is administered daily for a week. When the carbuncle has softened, the edges are spread, and the contents allowed to escape. Sulfanilamide may be placed in the crater. X-ray therapy, begun early, is said to benefit. If operation is done, wide incision, undermining the edges, and adequate packing are necessary.

The incidence of cancer of the larger bowel is greater, and the death rate from operations for

cancer of the stomach is much higher in this group of patients.

Besides ridding the diabetic of infections—bad teeth, diseased tonsils, infected paranasal sinuses, paronychia, prostatitis—since 68 per cent of them have impaired circulation in the feet, much can be done to prevent extension of the trouble; for the outlook at best is gloomy. "Keep the feet as clean as the face" is a happy slogan. But it does not go far enough. They must be kept warm, and free from even minor abrasions. Joslin says that he would like for his epitaph nothing more than, "He taught Jews and Gentiles to wash their feet". He insists on examining the feet of all his diabetics. The slightest injury, a cracking of the skin between the toes, callosities, pared nails, epidermophytosis—one or several—may be responsible for beginning gangrene. Hot-water bottles should not be used. The skin must be kept soft and moist. Woolen socks must be worn, and changed daily. The incidence of gangrene in diabetics is from 2.4 to 18 per cent. The average from 13 reported series of cases was 5.2 per cent. It occurs when arteriosclerosis is advanced. The best thing a diabetic can have for his feet is a good collateral circulation. He should not tend his feet. The patient's attention is first called to his feet by coldness, or pain on exertion, and painful calves of the legs, especially on lying down. Where pain is a prominent symptom, Sandstead and Beam found that 20 gms. of sodium chloride taken daily for two weeks, with an equal time of rest, and continued in this manner for a year or more, will relieve the pain. Ischemia, from arteriosclerosis, is the cause. Sodium chloride is a vasodilator. Buerger's exercises as modified by Allen, the vacuum pump, contrast baths, are all familiar methods.

By palpation, one can determine the level of the pulse. Pachon's oscilometer is accurate; but it gives no information regarding the collateral circulation. Histamine intradermally determines this level by the extent of the "flare". If gangrene appears in spite of preventive measures, infection is almost certain to result. The question then arises regarding the extent of operation. If the collateral circulation is good, more tissue can be saved. Samuels reports cases where, even in the presence of infection, amputation of one or more toes, opening pus pockets, and packing with azo-chloramide has produced good results. Here the collateral circulation was good. If the infection extends, amputation at a higher level must be done. In a decision as to the level of amputation, several factors must be considered—the general condition of the patient, his age, his vision, his ability to use an artificial limb if he recovers.

These patients are well beyond middle life, if not in years, certainly in the condition of their blood vessels. Few of them will be able to lead an active life. Hence they must not be treated as is the younger non-diabetic. They still have their diabetes. A good general rule is to amputate below the knee if pulsation of the popliteal is obtained. Otherwise, amputate above the knee. Gentle handling of tissues, placing sutures without tension, and complete hemostasis are essentials. Skin closure, with space between stitches until weeping has ceased, then additional stitches or clips, has resulted in prompt healing. Tourniquets should not be used.

The mortality from major amputations is high. Standard *et al.* from Bellevue, report a 16 per cent mortality in the clinic group. In the non-clinic group it was 49 per cent. McKittrick's total mortality in 495 patients was 13.9 per cent; in 300 supracondylar amputations it was 11.7 per cent. Obesity, advanced age, arteriosclerosis and infection increase the surgical risk in all diabetics. The mortality from operation for diabetic gangrene in this country is 13 to 65 per cent.

Any blood-stream infection, John thinks, should be cleared up before operation. With sulfanilamide, this is now possible. But if improvement is not prompt, amputation in a clean area above the obstruction should be done, with continued effort to control the infection.

In any patient not doing well in spite of insulin control, look for pus, tuberculosis, or cancer of the head of the pancreas.

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A MAJOR VIKING ANNOUNCEMENT FOR 1941

The Viking Press is now privileged to announce this biography of William Henry Welch, one of the greatest figures in American medicine, by Simon Flexner and James Thomas Flexner. Simon Flexner, now director emeritus of the Rockefeller Institute, was an early pupil of Dr. Welch's and throughout the rest of his life associated with him in many important undertakings.

Some Complications of Pregnancy*

CREIGHTON WRENN, M. D., Mooresville, N. C.

THIS presentation will be confined to the common complications which the general practitioner frequently encounters; however, any physician who undertakes the care of maternity cases should remember that every case is subject to any of the complications of pregnancy.

As in other diseases, prevention is the ideal; and proper care throughout pregnancy is the first objective in obstetrics. Unfortunately, many of the complications of pregnancy are unpreventable; but much can be done if one will keep in mind the probable complications of the various stages of pregnancy, and treat those which appear from their onset.

NAUSEA AND VOMITING

The commonest and usually the first complication of pregnancy is vomiting. The cause is still unknown. It has been classified into reflex, neurotic and toxic types. The reflex theory will be dismissed by stating that local irritative conditions have proved to be only coincidental findings rather than causative. Williams and his group at Hopkins have long held that a large percentage of these cases are neurotic or psychic in origin. The vast majority of writers on the subject agree that some form of toxemia causes the vomiting. Until more is learned about this toxemia, we are limited largely to treating the effects of the vomiting—acidosis, dehydration etc.—rather than the vomiting itself. Fortunately, most of these cases are mild and can be controlled by a high-carbohydrate diet and the use of sedatives an hour or so before eating. Chloral hydrate is still a good drug and since it exerts a local anesthetic action on the gastric mucosa it is probably more efficacious in this condition than the bromides or barbiturates. Rest is of value, especially at the time the patient is nauseated. Proper bowel function should not be forgotten and here diet plays an important part. When fruits especially prunes fail us, a combination of mineral oil and cascara or some other mild laxative should be resorted to. In the more severe cases bed-rest is essential, and sedatives should be increased and given per rectum, nothing being allowed by mouth; and large amounts of glucose should be given intravenously, with one-half unit of insulin for each gram of glucose. The hypodermic or intravenous administration of an ampoule of corpus luteum once or twice daily seems to help in most of these cases, although some prominent obstetricians still question the value of its use.

In those cases which appear to be psychic or neurotic in origin the feeding of liquids through a duodenal tube will prove beneficial.

If, after three to six days of intensive treatment of the more severe cases the patient does not improve, therapeutic abortion is indicated, especially if there is fever, a rapid pulse or jaundice.

Vaginal bleeding is a frequent complication of pregnancy during the first trimester. It may be physiological, but it is more often the first symptom of an ectopic pregnancy or of an abortion. Occasionally rupture of an ectopic pregnancy is dramatic, with pain, shock and fainting. It rarely has a rapidly fatal termination. More often the pain is less severe, with slight atypical vaginal bleeding, and dizziness followed by a pelvic discomfort which continues for a few days to be followed by another attack of pain and dizziness, or perhaps fainting due to internal bleeding. This bleeding from the ruptured tube is usually continuous but it is rarely so severe that life is put in immediate danger. At this time, or soon afterwards, pain may be referred to the shoulder girdle or rectum. Usually when there is a pint or more of blood in the abdomen shifting dullness can be demonstrated by percussion over the lower abdomen. When there is slow bleeding from the ruptured tube the blood coagulates in the cul-de-sac, and in such cases a pelvic mass can usually be felt on careful bimanual examination. An extremely tender cervix is a valuable point in the diagnosis of a ruptured tube when acute salpingitis can be excluded. Sedimentation rates and blood counts may be the same in the two conditions, but the examination of smears taken from the cervix and Skene's ducts will usually clarify the situation.

An early abortion must also be considered in the differential diagnosis of ruptured tubal pregnancy with vaginal bleeding. When vaginal examination fails to do this a curettage will occasionally have to be resorted to. But one must remember that a tubal pregnancy and a uterine pregnancy may occur at the same time, 294 such cases having been reported in the literature to date¹. Two such cases have occurred in the Lowrance Hospital during the past five years. These have not been reported.

Tubal pregnancy with rupture or abortion demands surgery under the most favorable circumstances obtainable.

*Presented to the Ninth District (N. C.) Medical Society meeting at Mooresville.

ABORTION

The most common major complication of pregnancy is abortion. It has been estimated that one out of every three or four pregnancies terminate in abortion, of which quite a few are criminally induced. The other causative factors are legion and in many cases it is impossible to find the cause. Fibroids or endometritis may be blamed. A diseased cervix, a retrodisplaced uterus or an ovarian cyst will occasionally be a factor. Trauma is frequently held responsible but seldom does it seem to be the sole or chief cause. In many instances the embryo has not developed properly. Debilitating diseases, especially the chronic ones, account for their share. Endocrine deficiencies play a definite role, particularly as regards hypothyroidism. Lack of vitamin E has a part in the causation of many spontaneous abortions.

The symptoms of abortion are vaginal bleeding, which may be alarming if the pregnancy has advanced to three months or more; pains in the lower abdomen and back, with history of amenorrhea. With this history our first inquiries should be whether it is spontaneous or induced, threatened or inevitable, complete or incomplete, aseptic or septic. Treatment must be instituted accordingly. For threatened abortion the invariable rule should be absolute rest in bed, continuing three or four days after all pain and bleeding have ceased. Progesterone and morphine should be given to allay all uterine contractions and to keep the patient quiet. Wheat germ oil, which has proved so valuable in habitual abortion, should be tried in large doses. No vaginal examination should be made unless abortion appears to be inevitable as indicated by hemorrhage. In the inevitable aseptic cases with hemorrhage and in the clean incomplete cases curettage should be done under the most rigid aseptic precautions, remembering always that the pregnant uterus is easily punctured with sound or curette. An ampoule of pituitrin injected deeply into the cervix at the beginning of any intrauterine manipulation will lessen the danger of perforation and of hemorrhage.

In the treatment of septic or infected abortion much judgment is frequently required. If the infection seems to be severe and is comparatively recent conservatism is indicated. All textbooks warn against interference until the temperature has been normal three to five days. However, if the cervix is open and the contents are readily accessible, it is safe to gently evacuate the intrauterine contents; and here the fingers are safer than any instrument.

Sulfanilamide and repeated small blood transfusions are indicated in practically all cases of septic abortion.

TUBERCULOSIS

A few words should be said about tuberculosis and pregnancy since in recent years there has been such a change in the method of handling these cases. Pregnancy and tuberculosis is not an infrequent combination. It was formerly taught that all pregnant women with active tuberculosis should have an abortion. This measure was not based on the information that is now available. Recent investigators, in reviewing more than 30,000 cases³, could find no case of pulmonary tuberculosis which proved to be aggravated by pregnancy. Of course proper obstetrical care with the continued treatment of the tuberculosis is indicated. The reasons why tuberculous patients do well during gestation are:

1. All physiological processes function at their best during pregnancy.

2. As the size of the gravid uterus gradually increases, the intraabdominal pressure is increased. This in turn results in the splinting, with elevation, of the diaphragm. As a result, changes in the size and contour of the chest take place which tend favorably to influence recovery from tuberculosis. After labor, however, when the diaphragm suddenly descends and expands the lungs again, there is danger of reactivating this relatively quiescent tuberculous process. This effect can be adequately modified or prevented by artificial pneumothorax, pneumoperitoneum or a phrenic operation immediately following labor.

PYELITIS

Even though it occurs in only about 4 per cent of all pregnant women, pyelitis often causes permanent damage to the kidneys, the degree proportional to the severity and duration of the infection. True uncomplicated pyelitis seldom exists; it is practically always a pyelonephritis. The diagnosis is usually easy, but occasionally catheterization of the ureter is essential to arrive at the cause of the fever, which may or may not be associated with chills. Urinary symptoms and pain over the lumbar region are usually but not always present. The treatment consists of rest in bed, plenty of fluids, free elimination, a light diet and the knee-chest position (if possible) two or three times daily. Urinary antiseptics are very helpful but only when there is function and fairly adequate drainage from the involved kidney. The causative organism should be identified by culture to give the patient maximum benefit from the newer and more potent urinary antiseptics. Urotropin with acid may be given from the beginning. It is inexpensive and causes little or no harm in any case. When practicable and convenient, cystoscopy with urethral catheterization should be done. Carefully performed, this procedure should not be feared as a possible cause of abortion.

In the milder cases the pelvis are usually irrigated and the catheters withdrawn. In the more severe cases it is better to leave the catheters in 24 hours and irrigate every three or four hours. In chronic or recurrent cases of pyelitis the preparation and administration of an autogenous vaccine will occasionally result in a cure when all other therapeutic measures have failed. In rare instances, when careful and intensive treatment fails, therapeutic abortion must be performed.

APPENDICITIS

Appendicitis can and often does prove to be a rather serious complication of pregnancy. Fortunately more than 80 per cent of the reported cases occurred in the first six month of pregnancy when diagnosis and treatment presents less difficulty. In the first trimester the symptoms are comparable to those occurring in the non-pregnant woman, and may be as classical, or as atypical, as this common disease may be. As the uterus enlarges there is a gradual upward displacement of the cecum and appendix, so that they may eventually lie under the liver. Leukocytosis is variable in uncomplicated pregnancy, and is therefore an unreliable index to the degree of inflammation of the appendix during pregnancy. The thinning of the abdominal musculature during the latter part of pregnancy makes rigidity a less reliable sign; however, it makes tenderness more significant and the diagnosis is best made by this one sign.

The only rational treatment of acute appendicitis with pregnancy is appendectomy. Ectopic gestation and twisted adnexal tumors likewise demand prompt surgical interference and their presence never should be allowed to so cloud the picture as to permit an inflamed appendix to rupture. Postoperatively, adequate doses of morphine should always be given to forestall labor when any inflammation has spread beyond the appendix, and in all premature cases. Postoperative labor has little or no effect on the healing of the well-sutured McBurney wound.

HEART DISEASE

Pregnancy increases the work of the heart, during the last trimester around 50 per cent. Only by calling on the heart to do more work, however, does pregnancy affect the diseased heart. No one has ever been able to demonstrate that pregnancy itself is able to cause any exacerbation of rheumatic heart disease. Therefore, if a patient is compensating and feels no cardiac embarrassment while doing light work, however loud or rough the murmur may be, pregnancy will not impose serious trouble if she follows adequate rules for care during pregnancy. Her activities should be adjusted to her capacity, and infection, especially

colds, should be treated with the greatest of care. Should, however, compensation fail in late pregnancy a real risk may be encountered during labor. If such cases do not respond to treatment interruption should be seriously considered. If the patient seems to have strength to stand delivery from below this is preferable, but the use of forceps to aid her is clearly indicated; or if decompensation does not improve under treatment, or becomes worse, cesarean section under local anesthesia probably offers her the best chance.

HEMORRHAGE

During the last trimester of pregnancy the hemorrhagic complications offer the most formidable of all the complications of the gestational period, and to combat these complications successfully it is necessary to treat them with precision and at times with celerity. One should not only check bleeding but should prevent shock and infection. Placenta praevia and premature separation of the normally implanted placenta may occur at any time during the last trimester.

Placenta praevia is diagnosed by the sudden onset of painless vaginal bleeding, seemingly without cause. The initial bleeding is rarely fatal. The shock is in proportion to the amount of visible blood lost. It is difficult at times to determine the type, whether it is lateral, marginal, or central. Especially is this true with an undilated or partially dilated cervix. Vaginal examination in such cases is hazardous unless done under the most rigid aseptic precautions. Be prepared before any examination to combat hemorrhage by packing or by immediate cesarean section. Have the blood typed and have donors immediately available. Cesarean section as a rule should be done as soon as the diagnosis of placenta praevia is made. Occasionally one will see a multipara with slight bleeding and dilated or dilatable cervix in whom rupture of the membranes with or without insertion of a hydrostatic bag will suffice. Also in an occasional case when the baby is small and the cervix is soft and somewhat dilated, an immediate version will be preferable. Braxton-Hicks version is not indicated if the baby is alive, but may be done if the fetus is dead and the cervix one-half dilated. It is well to keep in mind that any intrauterine manipulation increases the blood loss, shock and infection. Also there is possible danger of rupture of the lower uterine segment if version is attempted.

Premature separation of the normally implanted placenta is an extremely dangerous occurrence. At times it is seen during labor and here it is frequently not suspected until the patient is in shock. If the onset is during labor the only symptom may be expulsion of small clots during pains.

The onset of most cases is rather sudden with constant labor-like pains, fading fetal heart sounds, board-like rigidity of the uterus, with or without visible hemorrhage. Shock is usually out of proportion to the visible blood-loss. There is usually a history of recent trauma, and often a history of toxemia. One should especially be concerned if there is a history of nephritis, because in such cases anuria and uremia are prone to occur, and early treatment should be instituted to combat these.

The treatment of premature separation is immediate delivery by cesarean section, in practically all cases except those in which the separation occurs late in the first stage of labor. In these cases simple rupture of the membranes with acceleration of delivery of the fetus and placenta is sufficient. If the fetus in the second stage of labor is in distress, as evidenced by the fetal heart rate, version may allow safe delivery of a live baby and save the mother. Premature separation before the onset of labor, or early in the first stage, if neglected means the loss of the baby and probably the loss of the mother, or necessitates the removal of the uterus because of the infiltration of blood into the uterine wall with the loss of contractibility and subsequent post partum hemorrhage. If premature separation of the placenta is recognized early the maternal mortality should be slight; however, if treatment is not begun until late, many patients will die despite the best treatment that is at present available.

LATE TOXEMIAS

These are the most thoroughly investigated, but probably the least understood, of all the complications of pregnancy. There is still no unanimity of opinion as to the classification of these toxemias. They may be divided into the acute non-convulsive (preëclampsic) and the convulsive (eclampsic) toxemias. The entire syndrome develops in the course of a given pregnancy and is distinct from the chronic cardiovascular-renal conditions with which the woman was affected prior to the instant pregnancy.

We know that in eclampsia and preëclampsia angiospasm is a common pathogenic factor underlying all the varying expressions. This vascular manifestation is at first functional, but if allowed to last too long the walls of the small vessels become thick and sclerotic. This occurs not only in the kidneys, but in the liver, brain and other organs as well.

From various statistics it appears that clinical evidence of preëclampsia occurs in 10 per cent of the child-bearing population. With treatment, not more than two or three per cent of these will have eclampsia.

GENERAL VASCULAR SCLEROSIS

It is sometimes difficult to distinguish between preëxisting chronic general vascular sclerosis, or chronic nephritis, which may complicate pregnancy, and the acute toxemias which make their appearance in the latter months of pregnancy. A non-pregnant woman may have mild chronic nephritis and yet all the blood examinations and kidney function tests will be normal. Should such a woman become pregnant, she will show hypertension and albuminuria before the third trimester; whereas acute toxemia rarely manifests itself before the seventh month. In this early appearance of symptoms in chronic nephritis and the late appearance of symptoms in the toxemias lies a reliable and practicable means of differentiating between the two conditions. It is unfortunate that mild chronic nephritis cannot always be diagnosed before the onset of pregnancy—not even by the technical urea clearance test and the Addis count.

Those patients who exhibit no symptoms of nephritis or hypertensive disease before pregnancy but who in early pregnancy have mild hypertension (around 140/90), who have at most a trace of albumin, whose renal function is within normal limits may be treated expectantly; but both physician and patient must accept more than the average risk of aggravation of the existing condition by superimposed toxemia.

A woman who shows more hypertension and more albumin during the early months of pregnancy may be carried on to term, but irreparable damage to her kidneys with shortening of her life is to be expected. Kuder and Stander³ found that more than 40 per cent of women died within ten years after chronic nephritis was first recognized in the course of pregnancy. It appears, therefore, that if the disease is manifest at conception, abortion should be done promptly. If the disorder has been latent and appears early in pregnancy and is associated with considerable albuminuria which tends to increase despite treatment, it is unlikely that pregnancy can go on to proper termination. If to albuminuria is added edema or hypertension pregnancy should be arrested without delay.

The treatment of preëclampsia is at present more encouraging than formerly. It consists of adequate elimination, mild sedation, bed rest and dietary restrictions. Sodium chloride should be cut down to a minimum and only vegetable and milk proteins should be allowed. For the milder cases the diet may consist of skimmed milk, fruits, vegetables and salads; for the more severe cases only sweet fruit juices should be allowed. McLlroy⁴ and other British obstetricians gave as their opinion that a diet sufficient in vitamins, especially

vitamin D; and inorganic constituents, such as calcium, iron and iodine, is vital in preventing and treating preëclampsia. All agree that high-carbohydrate diet, including in many cases frequent intravenous injections of hypertonic glucose, and of magnesium sulphate to the severely sick patients, give excellent results. However, if treatment fails to cause improvement, termination of the pregnancy is indicated. To induce labor in these cases conservative methods are preferable to cesarean section.

Despite most adequate prenatal care and every known method of treatment of preëclampsia, true eclampsia may occur and may be fatal. Eclamptic convulsions present an immediate emergency which calls for active but not radical treatment. Therapy should be instituted to control the convulsions and remove the edema by diuresis. Here, hypertonic glucose, frequently administered, has its greatest calling. It dehydrates, protects the liver and prevents the development of acidosis. For sedation, morphine, chloral hydrate and the barbiturates have all proved effective. The intravenous use of magnesium sulphate is an important part of the conservative treatment of eclampsia. In addition to its sedative effect, it helps to rid the patient of edema by promoting diuresis. McNeille⁶ has given 20 c. c. of a 10 per cent solution intravenously every hour for as many as six doses with excellent results. It is the consensus of opinion, however that this drug should be given with caution when oliguria or anuria is present.

Current writers seem to have little favor for venesection as a treatment of eclampsia. Should, however, pulmonary edema develop, venesection, atropine and oxygen should be employed—as well as 50 per cent glucose intravenously.

As to termination of pregnancy in the eclamptic patient experience has shown that all the methods of delivery are inadvisable until the convulsions have been controlled. Even then forceful, mechanical emptying of the uterus is to be condemned. Plasse⁶ found the mortality following radical treatment of eclampsia to be 21.7 per cent of 4,607 cases, and only 11.1 per cent of 5,978 cases in which treatment was conservative.

SUMMARY

Only the more frequent and more significant complications of pregnancy have been discussed. The trend is more and more toward keeping the pregnant woman in a state of physiological equilibrium by encouraging the use of a high-vitamin diet and one which contains the essential inorganic constituents. This appears to lessen the incidence of many of these complications, or at least to give the patient more tolerance to such complications when they appear and make them less severe.

The active treatment of such complications is directed toward the complication itself, and toward restoring and keeping the physiological processes as near to the normal state as possible. Only by anticipating the sequence of events in regard to the patient as a whole can the maximum therapeutic results be obtained as to any morbid state. Much progress has been made in both the prevention and treatment of the complications of pregnancy; but vast strides are yet to be made before any newly-pregnant woman can be assured that on the expected day of confinement everything will go well.

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THE TREATMENT OF CHRONIC LEG ULCERS

(I. Zweigel, Newark, in *Clin. Med.*, Nov.)

The patient is examined physically and has a routine urine examination and Wassermann test. Diabetes mellitus, cardiorenal disease, tuberculosis, or overweight require medical treatment. If varicosities of the small or long saphenous vein are large and a Trendelenberg test positive in one or both legs, unilateral or bilateral saphenous ligation at one or two points is advised, in addition to local treatment. Any related constitutional condition is treated.

For the first 48 to 72 hours, wet dressings of a saturated solution of boric acid are applied. After this a 1:500 solution of azochloramid in triacetin, for 3 days; wet dressings of azochloramid-saline solution, 1:3300, for the next 4 days. These dressings in this routine repeated for at least 4 weeks. In 2 cases a mild, local skin irritation developed around the ulcer.

At the end of 4 weeks of treatment (on the average), the secondary infection had disappeared, granulation tissue was abundant, and the skin edges were growing in.

CARCINOMA OF THE RECTUM

(C. W. McLaughlin, Jr., & W. M. Dilworth, Omaha, in *Nebraska Med. J.*, Jan.)

In cancer of the rectum the definite symptoms appear late. Alterations in bowel habit during midlife in a previously regular individual should always be viewed with suspicion. Every patient with a rectal complaint merits a careful rectal and proctoscopic examination.

Prolonged Labor due to Uterine Dystocia—Calcium in the Treatment*

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MY PURPOSE is to discuss the frequency, the cause and the treatment of prolonged labors due to functional dystocias of the uterus and cervix - not those due to disproportions, malpositions and deformities.

A great many cesarean sections have been performed for functional dystocias of the uterus and cervix which might have been managed more conservatively. Hamilton found in 1000 consecutive labors one-third classified as true labor, the other two-thirds as false labor and preliminary labor. He reviewed 17,000 cases in which section was done for cervical dystocia, and concluded that section was indicated in only three of the 17,000 cases. This seems a rather sad commentary on our obstetrical judgement, and possibly helps to explain our low rating in the surgical world.

The musculature consisting of three layers of the uterus is arranged in a rather complicated way: (1) the external layer in which the fibres run transversely around the front and back of the uterus; (2) the middle layer composed of circular, oblique and longitudinal fibres; (3) the internal layer composed of circular fibres arranged in two cone shapes. The apex of each cone is situated at the junction of the uterus and fallopian tube, the fibres of one cone converging with the fibres of the other cone about the middle of the uterus. With such a complicated arrangement of muscle fibres incoming from all directions there must necessarily be a perfect coördination and timing in the action in order for the uterus to perform its function normally. The uterus is divided into an upper and lower segment. At the junction of these two segments is the physiological retraction ring - which is Nature's provision for keeping the product of conception in the upper portion of the uterus. Under certain conditions this physiological retraction ring becomes a pathological retraction ring and produces troublesome and dangerous hindrances to delivery. Pathological retraction ring occurs when labor is obstructed mechanically or by improper functioning of the muscles of the uterus, and in this condition the muscle, drawn up pathologically high, is usually called Bandl's ring. Also constriction rings, due to the same causes, may occur at any level of the uterus—at the external os, the internal os, or even in the fundus of the uterus—and interfere seriously with delivery.

The diagnosis of pathological retraction ring and constriction ring is not always easy, but the conditions may be suspected in prolonged labors in which there is little or no progress, in cases in which there is a great variation in time and force of the pains, and particularly when the uterus remains more or less constantly contracted. A constriction ring can frequently be felt by vaginal examination at the internal or external os, or even above the cervix.

It is generally agreed that in normal labor there are two distinct processes—contraction and retraction of the muscles of the uterus—and a rhythmical coördinated action of these two processes is necessary for the normal progress of labor. Normal contraction and retraction result in rearrangement of the muscles of the uterus; *i. e.*, in a thickening of the muscles of the upper segment, a thinning of the muscles of the lower segment and dilatation of the cervix. When for any reason, mechanical or functional, we do not have this rhythmical, coördinated action of the muscles of the uterus the result is false pains, tetanoid pains, false labor, preliminary labor. This condition may last for hours or days without progress; *i. e.*, a condition in which there is not the normal sequence and normal strength ratio between the contractions of the different muscles of the uterus, but an imbalanced action of the muscles in which the circular fibres exert the greater force. Pathological retraction ring and constriction ring are always preceded by false or tetanic pains. Therefore, if false, tetanic pains can be prevented, we can prevent pathological retraction and constriction ring and thereby avoid many dangerous complications of labor.

My purpose is to find the causes in (1) a disturbed autonomic system, (2) calcium deficiency, or (3) in a combination of the two. It must be remembered the uterus gets most of its nerve supply from the sympathetic system. We would therefore expect a normally acting sympathetic system to produce the normal physiological actions of the muscles of the uterus; *i. e.*, rhythmical contraction and retraction, and normal labor: but we would not expect the same from a disturbed sympathetic system. The autonomic nervous system, consisting of the sympathetic and para-sympathetic, is an involuntary system, much influenced by the emotions of anger, fear, pain and anxiety,

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and especially by suppressed emotions. By these emotions the sympathetic is quickly stimulated, and the cranial division of the parasympathetic (*i. e.*, the vagus) is inhibited. We must remember the very close association and interaction of the endocrine glands, the sympathetic nervous system and the organs of reproduction; also that the adrenals, the thyroid and pituitary are stimulated by the sympathetic and that each acts and reacts with the reproductive organs.

Langdon Brown says, "With increasing civilization the threshold to pain and painful emotions becomes lowered and the resulting disabilities are exaggerated." He further says, "The evil effect of depressing emotions of anxiety, fear, pain and anger receive an explanation when we see that through the sympathetic nervous system they can lead to functional disturbances, even to structural changes." We see then disturbing emotions exciting the sympathetic system, the sympathetic stimulating the secretions of the endocrine glands, and these in turn stimulating both the organs of reproduction and the sympathetic system. So we have a vicious cycle established which would produce anything but a normal functioning of the musculature of the uterus. We know of the emotional disturbances in pregnant women. If we grant disturbing influences of pregnancy and labor sufficient to upset the normal action of the sympathetic, then we have a probable cause for the abnormal, arrhythmical, uncoordinated, ineffective contractions of the uterus, called by many names, which precede and result in pathological contraction ring, constriction ring, prolonged and often impossible labors.

The normal calcium content of the blood is about 10 mgs. to 100 c. c. There is much doubt about the exact forms in which calcium exists in the blood. The physiologically active and diffusible portion is supposed to be controlled by the active principle of the parathyroids. We may have a condition of normal blood calcium, but with a deficiency of *diffusible* calcium, and from this complex all the symptoms of calcium deficiency. The idea of calcium deficiency being a cause of false pains etc. was suggested by the frequency with which false uterine pains occurring during the later part of pregnancy and during labor, are attended by cramps in the calves of the legs and various other paresthesias suggestive of calcium deficiency. Since the estimation of diffusible blood calcium is so difficult, we may rely upon the calcium deficiency syndrome as evidence of a deficiency of diffusible blood calcium. There is an extra demand for calcium during pregnancy, especially during the last ten weeks, the time during which false pains etc. are most apt to occur.

With a nervous, fearful patient whose sympathetic system is disturbed, there can be found good reasons to explain a calcium deficiency. Excitement of the sympathetic (1) stimulates the thyroid, which in turn increases the oxidation of calcium; and (2) inhibits the vagus and thereby diminishes the digestion and assimilation of calcium. Also, through its effects on the parathyroids, it diminishes not only the total quantity, but the diffusible portion, of calcium. Alkalemia and nephritis decrease diffusible calcium.

Available blood calcium in normal amount produces normal muscle contractions, and has a quieting effect on the sympathetic system. A lack of blood calcium produces tetanic muscle contractions and excites the sympathetic system.

How to recognize false pains etc.:

- (1) Anticipate them in intensely nervous, anxious and fearful patients, especially in those attempting to suppress their emotions and in patients who have had previous difficult labor.
- (2) In those cases which show no progress after hours of hard pains and whose pains are now irregular in time and force.
- (3) When contractions are induced by even laying the hand on the uterus or by vaginal examinations.
- (4) When the patient complains unduly of pains low in the pelvis, frequently worse in the back.
- (5) When the uterus remains hard or tetanic between pains; *i. e.*, appears almost constantly contracted.

Colicky action of the uterus can be recognized by the fact that pain of the uterine contraction persists after the palpable hardening of the uterus has disappeared. In normal contraction of the uterus the pain stops before the contraction has stopped. This in my experience is a valuable diagnostic point.

TREATMENT

- (1) Prenatal attention to the physical and nervous system in preparation for the ordeal of labor, removal as far as possible of the fear and dread of childbirth. Administration of calcium with vitamin D from the third month of pregnancy.
- (2) During labor sparing the patient as far as possible all disconcerting surroundings and influences, such as the presence of nervous, anxious members of the family and friends. Avoid anything which would excite the sympathetic system. An encouraging, trained and consoling attendant is of the greatest help. Early sedation is indicated, for the more nervous, anxious type of patient. Fre-

quent vaginal examinations, and frequent laying of hands and pressure on the abdomen by either physician or other attendant tends to increase the frequency of futile pains. Give no oxytocic. In case of the appearance of false, colicky pains, produce further sedation, if necessary with morphine. In those cases in which sedation is not effective I have found the intravenous use of calcium most helpful. Especially is calcium useful in those cases which would require such deep sedation as to stop the progress of labor. Frequently these cases, with mild sedation and calcium, will go into a normal productive labor. Sedation by itself is not sufficient if the calcium deficiency is great.

SUMMARY

- (1) Too many cesarean sections are done and too much operative interference, in cases of dystocia consequent on abnormal physiology of the uterus and cervix.
- (2) The uterus gets most of its nerve supply from the sympathetic system. Normal action of the sympathetic system produces normal, rhythmical, coordinated muscular action of the uterus—that essential normal contraction and retraction which constitutes normal labor.
- (3) The emotions—pain, fear etc.—excite the sympathetic system.
- (4) Emotionally excited, the sympathetic nervous system produces abnormal, arrhythmical, uncoordinated, muscular action of the uterus—the false, colicky or tetanoid pains, which often precede and terminate in contraction and constriction rings and difficult, dangerous deliveries.
- (5) Calcium deficiency may produce false, tetanic pains in the uterus and also excite the sympathetic system.
- (6) By maintaining a normal sympathetic system and a normal available blood calcium, we should be able, in the greater number of cases, to prevent prolonged labor due to uterine dystocia.

THE MORTALITY FROM ACUTE APPENDICITIS IN THE JOHNS HOPKINS HOSPITAL

(E. S. Stafford & D. H. Sprong, Jr., Baltimore, in *Jl. A. M. A.*, Oct. 12th.)

In the surgical service of the Johns Hopkins Hospital patients considered to have acute appendicitis in any stage of the disease are subjected to immediate operation. From Sept. 1st, 1931, to Sept. 1st, 1939, 1317 of these patients had acute appendicitis. All cases in which there was no gross perforation of the appendix are classified under simple acute appendicitis. All those in which perforation of the appendix was found at operation (except those in which rupture was caused by handling during operation) are divided into two groups:

1. Appendicitis with perforation and abscess-formation.

2. Appendicitis with perforation and peritonitis.

No attempt has been made to distinguish between "local," "spreading" and "generalized peritonitis. We agree with Ladd that "no surgeon really knows how diffuse the process is unless he has done a very improper operation."

Condition	No. of Patients	Deaths	%
Simple acute appendicitis	838	0	0
Appendicitis with perforation and abscess	238	20	7.00
Appendicitis with perforation and peritonitis	196	28	14.23

A study of the 48 fatal cases leads to certain conclusions. The use of drains is open to question. We have employed drainage as a matter of routine when pus was present but have come to feel that the presence of drains may in some instances produce adhesions which cause mechanical ileus. We are not prepared to say whether this danger is greater than that of the complications which might arise if drainage were not employed.

The most controversial subject which has arisen with regard to appendicitis is the so-called delayed or expectant treatment of perforative appendicitis. We are certain that this is poor treatment and that advocacy of this method has had an unfortunate effect on the general practitioner. The most experienced doctors are at times unable to determine whether or not an appendix has perforated. Granted that a patient has signs of peritonitis, it is not always possible to know the cause before operation. Through a McBurney incision it has been found that peritonitis may be due to perforation of a peptic ulcer, to Meckel's diverticulum or to an infected diverticulum of the sigmoid flexure of the colon. In the past two years one of us has operated in three cases of primary pneumococcal peritonitis, having made a preoperative diagnosis of perforative appendicitis. The correct diagnosis made at operation permitted treatment with specific serum and sulfapyridine, with prompt recovery.

In a series of 85 consecutive cases of perforative appendicitis treated in this hospital during the years 1923 to 1931 there were 16 deaths, a mortality rate of 18.8%. This is nearly twice that of our present series. The only real differences in treatment in the two series were the institution of suction and the administration of intravenous fluids in the cases making up the present series.

It has been argued that operation on an appendiceal abscess often spreads infection. In our series 283 patients with appendiceal abscess were subjected to immediate operation. In only two of them did spreading peritonitis cause death, and in one of these two the outcome was due to our failure to recognize and deal with the primary appendiceal abscess. In the other case it is not certain whether the spread of infection occurred before, during or after operation.

TREATMENT OF INFECTIOUS DIARRHEA WITH SULFAPYRIDINE

(A. J. Villani, Welch, in *W. Va. Med. J.*, Sept.)

Sixteen cases of infectious diarrhea are presented in which sulfapyridine seemed a specific. Within 24 to 48 hours after the first dose of the drug, the stool dropped to normal and shortly afterward the stools returned to normal. In 9 cases, stool cultures were negative for members of the typhoid or dysentery group. In the remaining cases, no stool cultures were obtained. There was one death. In this case the sulfapyridine was discontinued because the infant was unable to retain the drug. There were no serious complications from the use of sulfapyridine. The minimum dose was administered and its action was apparently prompt.

SURGICAL OBSERVATIONS

OF
DAVIS HOSPITAL STAFF
Statesville

A REVIEW OF SOME OF THE PROGRESS IN GENERAL MEDICINE, GENERAL SURGERY AND THE SPECIALTIES DURING 1940

IN the fields of medicine, surgery and their various specialties, there has been great progress made in the past year.

As we enter the New Year, war clouds are rapidly gathering over America. Those who recall events prior to the first World War recognize the signs of a country getting ready to go to war, together with the war-like evolution of public sentiment which usually precedes all wars.

During World War I, surgery made the greatest advances. Medicine advanced too. As the various armies fought to destroy each other, the medical profession worked even harder to save the wounded and rehabilitate and restore to usefulness.

The more seriously injured and those who received injuries which were classed as permanent were given careful treatment with the aim of best enabling them to make their own living and take their places again among their fellowmen, even though many had to change their occupations because of war injuries. Many of these, of course, were never able to work again, but the majority were able to take up some profession, trade or vocation which would enable them to earn a living, at least in part.

This rehabilitation program continued for many years after the close of the war. Members of the medical profession have to work many years after a war is over to obtain maximum improvement and best results for the wounded.

With the coming of another war even greater and more rapid progress will probably be made when the test comes. This is about the only favorable and encouraging thing about the entire situation.

Better means of immunization against various infections are now available and this alone will be a tremendous factor in saving lives. The availability of sulfanilamide and its derivatives will enable us to control many infections that killed thousands during the last war. The various streptococcal infections, pneumonias, and certain venereal diseases can be handled much more satisfactorily and with the minimum of morbidity and mortality. Pneumonia especially has come under control by use of sulfapyridine and sulfathiazole and the specific serums for certain types.

Plastic surgery, bone surgery, especially bone grafting, and reconstruction surgery generally can offer even greater hope to the maimed and wounded

than ever before. Vocational rehabilitation as a sort of follow-up procedure will be an important feature in the seriously wounded.

Aviation medicine has now progressed to the point where would-be pilots can be examined and the unfit weeded out with great accuracy. During the past World War of every 100 pilots who were killed two were killed by enemy action; eight by defective airplanes; and ninety died due to defects in themselves. Thanks to aviation medicine, which has reached a high point of development, the unfit pilots can be eliminated before a great deal of money is spent in training them, and the ninety per cent who died due to defects will be saved for the work for which they are suited. The great improvement in airplanes will eliminate many of the eight. This means an enormous saving in life.

Improved methods of sanitation, water supply, care and preparation of food, should eliminate much sickness and many diseases. These are only a few of the things that may be mentioned as being important factors in the care of the armed forces of our country in the war which appears imminent.

In other fields of medicine and surgery, we have improved methods for the treatment of carcinoma and a greater percentage of cures are effected than ever before. In the incurable cases better means are available for prolonging life in comfort. Biochemistry also offers many hopes for the possibility of specific treatment of cancer. New developments in the splitting up of atoms by the various cyclotrons offer great hope of obtaining radiation that may be a great aid in treating cancer.

In the field of urology the treatment of the prostate gland has improved to the point where the percentage of good results in prostate surgery, especially from transurethral resection, is greater than would have been dreamed of twenty years ago. If patients come in before there has been permanent impairment of the kidneys, good results are fairly uniform. Urinary infections, too, many of which were formerly difficult to treat, now yield readily to sulfanilamide and its various derivatives. In urinary conditions, also, we are able to treat certain conditions in men by use of the male sex hormone and restore them to a fairly normal condition and relieve many of the mild mental symptoms and the debility that are usually distressing.

The treatment of gonorrhea and syphilis is on a firmer basis and gives a higher percentage of good results.

In the fields of ophthalmology and otolaryngology great improvements have been made in the treatment, especially in sinus conditions and various chronic infections which formerly were most difficult to treat.

In orthopedic surgery, especially in the treat-

ment of fractures, great improvements have been made. In the treatment of compound fractures we can often eliminate infections which formerly retarded healing and sometimes caused non-union. In the treatment of intracapsular fractures of the hip and intertrochanteric fractures, we have a method now which gives good results in most cases. The use of the Smith-Petersen nail in simple intracapsular fractures, and in intertrochanteric fractures the combined use of the Smith-Petersen nail with an angle bar, will take care of many fractures which otherwise would have been most difficult. The former methods of treating fractures of the neck of the femur with plaster splints, which required the patient to be encased in a splint for a period of time, was naturally the cause of many complications such as pneumonia, bed sores and other serious conditions. Now, however, the use of the Smith-Petersen nail has enabled us to get good results, even in very aged patients where otherwise non-union would have been the rule no matter what treatment was given. Also, this method of treating fractures of the neck of the femur makes it easy for the patient, who can usually be up in a chair a day or so after the operation. Another good thing is that the operation is not associated with much shock.

All in all, one of the greatest improvements in the treatment of fractures of the hip was made with the advent of the Smith-Petersen nail. We must not forget, however, that the Albee bone pin is still useful in many cases and that to Albee much credit for the improvement in treating fractures of the hip is due. The Austin Moore pins, also, are very useful in certain types of fractures of the neck femur.

In the treatment of fractures generally, the use of Vitallium bone plates and Vitallium screws has enabled us to put plates on many fractures and leave the plates in position for long periods of time and obtain healing by the maintenance of good apposition and mobility. As everyone remembers, steel bone plates and ordinary screws were useful in some cases, but often they would come loose. This was found to be due to electric action. Where union was rapid the plates would hold sufficiently long, but where union was slow they would come loose too soon. Now, however, with the use of Vitallium plates and screws, which we use exclusively for plating fractures, we obtain better results than ever before. Also these plates and screws may be left in indefinitely and, in some cases, do not have to be removed at any fixed date.

A condition which has been extremely difficult for both doctor and patient is the menopausal syndrome. Now we can treat this with a great deal more assurance than ever before with the

use of estrogenic hormones and stilbestrol and some of its derivatives. In many instances the relief from the nervousness, hot flashes, chills and the various other manifestations, as well as the mental symptoms, can make the patient comfortable, contented and relieve the family of the strain of caring for the patient, who is often a great burden to those about her.

The use of vitamins, which are now available in forms which may be used hypodermically or intramuscularly, will enable us rapidly to obtain results in otherwise prolonged and difficult cases.

A microscope has been devised which uses electrons instead of light and by means of this instrument, the study of organisms will be greatly facilitated and certain diseases, formerly classed as virus diseases are now known to be caused by definite microorganisms.

Bacteriology. A microscope that will magnify 25,000 to 30,000 times will open up to the bacteriologist and to the research worker fields never before dreamed of.

In the study of organisms heretofore invisible even with the most powerful microscope many minute pathogenic bacteria that have not been seen before will now be clearly visible and in their most minute detail. Before long, it is to be hoped, diseases the causes of which are unknown, will have their causes disclosed by means of these powerful microscopes, and we thereby enabled to prevent many more diseases, save many more lives.

Anesthesia. One of the most helpful anesthetics for short operations is pentothal sodium. This can be used with a maximum of safety and assurance of great simplification of certain surgical operations which require general anesthesia of some kind. Many patients who are unable to take inhalation anesthetics are able to stand pentothal sodium without disturbance. Some surgeons are using this for many major operation. In military surgery we believe that this anesthetic will be one of the greatest helps because it can be administered easily and is especially suited for the manipulation and reduction of fractures and the various surgical procedures of military surgery. Debridement of wounds, secondary closures and the various military surgical procedures requiring a short anesthetic to prevent the infliction of extreme pain and shock can be done nicely with this anesthetic.

The many advancements in the technique of the administration of spinal anesthesia make this one of the most useful and satisfactory anesthetics for general surgery, especially surgery below the diaphragm.

We may view medicine and surgery and the various subdivisions as now on the threshold of

even greater progress than ever before, and as we view another war there never was a time when these are more badly needed.

The medical profession, is constantly striving to eliminate sickness and disease, to save and prolong life and make the world happier.

Today the world is dismayed, agonized and generally upset. The destruction of life and property is appalling. In many ways it seems that the world is going backwards. However, so long as the medical profession maintains its independence and continues to augment its powers to save mankind we can look toward the future with confidence—that everything will eventually come out all right.

PNEUMONECTOMY FOR BRONCHOGENIC CARCINOMA

(J. D. Bisgard, Omaha, in *Neb. State Med. J.*, Jan.)

The first successful total removal of a lung for primary carcinoma was performed by Graham 7 years ago. This patient is well and enjoys a normal active life. From various clinics throughout the world there have been reported cases of persons living and well 5 and 3 years after total pneumonectomy.

Primary carcinoma of the lung is *not an uncommon disease*. It was found to have an incidence second only to carcinoma of the stomach in a series of 7,685 routine consecutive autopsies performed at the Cleveland Hospital; in Jaffe's series of 6,800 the lungs held third place in point of primary source of carcinoma; the stomach and bowel holding first and second places, respectively.

The early symptoms are *cough*, pain hemoptysis and wheezing. The sputum may become purulent and even fetid. Blood-streaked sputum or gross hemoptysis are very alarming symptoms, but they do not occur in the majority of cases. Fever is a common and misleading symptom.

Dyspnea and wheezing (often interpreted as asthma) may occur early from partial occlusion of a bronchus. Early, many patients complain of sensations of pressure or vague distress; only a few of actual pain.

The diagnosis may be suspected upon the basis of symptoms and physical findings. An absolute diagnosis can be made only from a biopsy obtained by bronchoscopic examination possible in the majority of cases but impossible in those cases in which the tumor is located well "around the corner" in an upper-lobe bronchus or in a peripheral portion of the lung. Biopsy material has been procured by aspiration into a needle passed through the chest wall and lung into the tumor, but this procedure is too dangerous. Carcinoma cells have been found occasionally in the sputum so that a search of several specimens of sputum may be worth while.

In those cases in which biopsy material cannot be obtained, but in which the evidence otherwise is fairly conclusive, exploratory thoracotomy should be done.

In a case of my own this operation was done on July 19th, 1939. Except for an unexplained period of high fever lasting a few hours his convalescence was uneventful and he was discharged from the hospital 5 weeks later. When last heard from 8 months after operation, he felt well and was able to carry on his usual activities.

EVERY casualty in the British Army now receives prophylactic sulfanilamide for 48 hours after wounding. The measure is an important step in reducing mortalities.—R. Hare, Toronto, in *Canadian Pub. Health J.*, Sept.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

IS THERE BALM IN GILEAD?

NOR since Napoleon was at the height of his rampaging in Europe has a new year made its advent into a world so filled with tragedy, human slaughter, destruction of property, gloom, fear and hopelessness. One cannot avoid the thought that the events of the current year may determine for centuries the destinies of many peoples. Many governments have been destroyed; many political geographic lines have been obliterated by the military machine. New national affiliations have been created by the application of force. Human lives have been destroyed by the millions. Those not yet born will look upon the blind, the seared, the warped and the distorted by the millions—victims of modern military efficiency.

But the most dreadful injuries will not be obvious to the eye. The most dreadful assaults are falling upon the emotions and the spirits of those within the countries engaged in war. Many of the victims are far from the front lines of war. But the battle-lines can no longer be so spoken of, for the enemy, unseen, may do his hurt to civilians from the air, from beneath the surface of the water, from an armored mobile fort, proof against shot and shell. And many traumatized permanently in their attributes will remain helpless cripples until the Boatman takes them across the River. There must be already in Europe and in Asia millions untouched by military missiles who are helpless, nervous and mental wrecks, consequent upon the terrors through which they have lived. And the number is constantly being multiplied. Can a robust, wholesome progeny spring from parents who have lived through the devastations of a modern war?

PRUDENCE INSTEAD OF PERSECUTION

NEITHER the daily press nor the medical journals have lately referred to the purpose of the President of the United States and his responsive Prosecutors to bring into the court-rooms all those many physicians who were only recently charged with the commission of grave crimes. Has the President decided that it would be more prudent to wait until after the physicians had ministered to the sick and the wounded of the services in the war out of which the President has kept our country, before he has the doctors convicted and branded as malefactors? The Presidential hostility to the

physicians has lessened, apparently, just as his hostility to the industrialists has likewise cooled—and for the same reason—because he realizes that he would be handicapped, indeed, as Commander-in-Chief if denied the enthusiastic support of physicians and manufacturers. Had the war alarm come two or three years sooner the United States Supreme Court would have been saved from successful Presidential assault. Had the war-scare not disturbed the Presidential peace of mind the harassment of the physicians and the industrialists would have been kept up.

Once upon a time the President intimated that he had dipped an eye into Macaulay; or did one of his shadow-readers do the dipping? Sometime when on a naval or a piscatorial cruise he might turn the Presidential eye to an essay of Bacon, and learn that, in the opinion of that mighty Briton, adversity is the most effective schoolmaster the world has ever known.

INCLUSIVE? EXCLUSIVE?

THE instrument of the press-photographer seemed to be unable to find in the group of medical notables that graced the recent dedication of the new psychiatric addendum to Duke Hospital any psychiatrist from North Carolina save Dr. Robert Sproul Carroll, of Asheville.

UNRECOGNIZED HYPOTHYROIDISM

Nor infrequently I find the patient's thyroid gland is apparently not functioning up to the normal level. I should say rather that the presenting symptoms of the patient bring me to that diagnostic thought. What complaints, especially, should cause the doctor to turn his thought to the thyroid? In a youngster, to be sure, lessened energy, lessened interest, inertia, and often complaint of being unable to do at all except by vigorous effort those things that had formerly been done cheerfully and easily and efficiently. Gloominess and despondency, with self-reproaches and not infrequently with a thought of suicide, are not unusual concomitants of the too-sluggish thyroid situation. The pulse is likely to be too slow, the blood pressure below the normal level, and the temperature is inclined to be subnormal. The hair and the skin are generally dry. From the subthyroid individual the doctor can find out by tactful questioning that even the most torrid summer is preferable to even a mild winter. The appetite is usually lessened. Constipation may be a complaint. The appearance of the individual may have undergone change. There may be a tendency to pudginess. The lips may be, for example, slightly thickened, the eyelids may look heavier, and the tissues about the eyes may appear a little puffy.

Though physical and mental sluggishness are

usually associated with hypothyroidism, the subthyroid individual may be rather restless, irritable, and complaining, acting, indeed, as if the situation constituted a conscious sort of vexation. A basal metabolism test will usually give added helpful diagnostic information.

I am certain that we should keep constantly in our medical minds the probability of existing thyroid dysfunction—more especially lowered activity. In the first third of life the condition is not unusual. I think I may say that in young people the condition is not unusual. Mayhap the demands made upon the nervous system and the ductless glands by the hurry and the hazards and the tension of modern life cause fatigue of the thyroid; and sometimes, on the other hand, excitement of the gland, with too much outpouring of the secretion.

SURGERY

GEO. H. BUNCH, M.D., *Editor*, Columbia, S. C.

PLASMA AS AN AGENT FOR TRANSFUSION IN WAR

THE increased demand for blood transfusions has caused the establishment of blood banks in most of the larger hospitals so that blood of any type is made immediately available for emergency use. The blood bank has proved its worth; many lives are being saved by it.

As an essential part in the national defense program which is being put into operation in the United States every soldier with a negative blood Wassermann test should have his blood typed and the type recorded with the name of the soldier and his regiment on the metal identification tag which he is required to wear suspended from his neck. This would greatly facilitate finding suitable donors to supply the urgent demand for blood which would arise during and after a battle.

However, recently acquired evidence that plasma as an agent for transfusion may be, apparently, in many cases in every way as effective and as restorative as whole blood has materially changed our conception of the importance of the causative role played by the loss of red blood corpuscles and of hemoglobin in the symptoms of hemorrhage and of shock. Transfusion after severe burns should always be of plasma.

For military use plasma has many advantages. Following the introduction of cellophane tubing as a substitute for rubber tubing Hartman (*J. A. M. A.* Dec. 7th. 1940) noted the rapid concentration of whole blood hung up in $\frac{3}{8}$ -inch tubes with complete desiccation (drying) of 150 c. c. in twelve hours at 70° F. Upon this principle he

has perfected a method by which plasma may be readily and cheaply desiccated in sterile cellophane containers. It is believed that in these containers desiccated plasma may be transported and kept indefinitely before use. Upon the addition of sterile water the plasma dissolves and is ready for transfusion. However, "In case of an emergency in which distilled water is not available the desiccated plasma may be regenerated by simply immersing the cylinders in water, as the cellophane is impermeable to bacteria and pyrogens. By rotation, sufficient water is taken up so that a satisfactory though concentrated plasma is obtained in a few hours." It is of practical interest to know that the cellophane tubing described is the synthetic covering or skin used in the making of 'hot dogs.'

The ability to concentrate, to dry and to preserve plasma cheaply and effectively in containers that may be readily stored and transported will enable America to send quantities of it overseas. To be effective in any given case is should be administered in sufficient quantity. A severely wounded person may have to be given several pints of plasma.

Unused blood in the bank after ten days storage may be salvaged by being made into plasma.

The British have found that serum is equally useful as an agent for transfusion and may be preserved in a similar way to that of plasma. "There are certain advantages in collecting serum rather than plasma, since serum will dry somewhat more easily than plasma owing to the absence of fibrin, of sodium citrate, sodium chloride and possibly dextrose." (*J. A. M. A.* Dec. 28th. 1940, 2285).

Although the substitution of plasma for blood in transfusion is still somewhat in the experimental stage we may rest assured that sufficient progress has been made to greatly simplify the problem of transfusion in war.

A CRITICAL STUDY OF REFRIGERATION THERAPY

(M. E. Sano & L. W. Smith, Philadelphia in
Jl Lab. & Clin. Med., Dec)

This is a study of 50 patients with malignant disease subjected to local, generalized, or combined refrigeration, compared to 37 closely analogous terminal cases of cancer given only the usual treatment.

Critical analysis of the heart, lung, liver, spleen, and the kidney findings reveals no very significant differences in the two groups.

Acute pancreatic changes were found in about 10% of the persons given refrigeration.

The effect of refrigeration upon metastatic disease, as demonstrated by serial x-ray as well as autopsy studies, is discussed. It is suggested that at least 240 hours of such generalized refrigeration is apparently needed to induce any significant regression of such metastases, and that such regressions are of irregular occurrence only.

The further exploration of the use of reduced tempera-

ture as an adjunct to other forms of treatment of cancer is urged.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., Health Officer Pitt County,
Greenville, N. C., Editor

TULAREMIA—OR RABBIT FEVER

WE are now in what is known as the rabbit season in North Carolina, the time of year when the rabbit is a part of the diet of a large number of our citizens, especially those in the rural areas.

Within the past two weeks, two cases of tularemia have been reported in Pitt County.

It is probable that other areas in the State are similarly affected, and we have to assume that where two cases of this disease are reported there are many others unreported—undigested, either because no physician was called or that the physician did not study the case with tularemia in mind.

We, of course, are interested in tularemia chiefly from the public health standpoint. What we shall say about the disease is based largely upon Rosenau's description in his *Preventive Medicine & Hygiene*. He states in general, that the only animals found affected in nature are the ground squirrels of California and Utah and the jack rabbits and cotton-tail rabbits of the several states. Rabbits raised in rabbitries are not affected.

The disease is transmitted from one rabbit to another by the wood tick. Man contracts it in this way and by handling infected animals or carcasses, which accounts for the incidence among hunters, cooks, market men and laboratory workers.

The disease was first described by McCoy in 1911 as a "plague-like disease of rodents" in California, Tulare County; hence the name tularemia. McCoy and Chapin in 1912 discovered the causative organism, *Bacterium tularense*.

The incubation period is from two to five days; the onset is sudden with headache, chills, body pains, vomiting and fever. An inflamed papule develops at the site of the infection, which soon breaks down, liberating a necrotic core and leaving a small punched-out ulcer with raised edges. The regional lymph nodes become painful, swollen and often suppurate. The picture is that of an acute lymphadenitis. The fever lasts two or three weeks and may reach 104° with a transient remission on the third or fourth day, or daily remissions suggesting a septic condition. Convalescence is slow and drags along with weakness for several months, sometimes a year. There are no sequelae and fatal cases in man are rare. So far as is known, the disease is confined to the U. S. and Japan.

The history of the case and the symptoms may suggest tularemia, but the diagnosis depends upon agglutinins and cultures of *Bacterium tularense*.

It is said that one attack in man confers immunity. Prevention of the disease is chiefly a matter of wearing rubber gloves when dressing rabbits.

The health officer can inform the public through the newspapers and by radio, and such information to the public can be greatly extended if the family physician will also sound a word of caution to the families under his care.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

PREVENTION OF DEAFNESS

MANY cases of deafness in adults can be prevented by the proper treatment in childhood. The Eustachian tube is a ventilator and its obstruction by lymphoid tissue will result in a painless and insidious type of progressive deafness. *Before the age of puberty adenoids recur in more than 75 per cent of the children whose adenoids and tonsils have been removed...* In many cases this tissue cannot be removed surgically. This lymphoid obstruction can be removed safely with radium if the radium is used in the proper dosage, at proper time intervals by a competent radiologist. Radium must not be used indiscriminately as a treatment of deafness but only in those cases that show:

1. On otoscopic examination—Retraction of the tympanic membrane—especially Sharpnell's membrane.
2. On nasopharyngoscopic examination—Obstruction of the Eustachian tube orifice by lymphoid tissue.
3. On audiometric testing—With especial reference to 8,000 d. v. and the higher tones, i. e., their reduction.

If these conditions are found in a child before the age of puberty the use of radium is indicated.

In using radium the following points must be kept in mind:

1. Radium must not be used indiscriminately as a treatment for deafness.
2. It should never be used within two weeks of an upper-respiratory infection.
3. The best results are obtained in children with beginning impairment of hearing as a result of lymphoid hypertrophy obstructing the Eustachian tube orifice.
4. Radium in the form of Radon seeds

is an effective, safe and painless method of reducing lymphoid tissue in and around the Eustachian tubes.

5. The dosage should be 1.8 to 2 gram minutes given not oftener than at six (6) weeks intervals. In many cases it has been found necessary to repeat the treatment once or twice a year until puberty.

It is the reviewer's impression that this work by Dr. Crowe and his associates is a noteworthy contribution to preventive medicine, translatable to useful application in the hands of all of us in our daily work.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

HOARSENESS IN TUBERCULOSIS

HOARSENESS in the course of tuberculous disease is a frequently occurring symptom, and varies from slight voice change to occasional complete aphonia. Many patients with this symptom are suspected of having laryngeal tuberculous ulceration, and are referred to the laryngologist for examination for that condition. Although hoarseness is the most frequent symptom in tuberculosis of the larynx, the percentage of patients with that symptom who have tuberculous laryngeal ulceration is small. Indeed there may be at times extensive tuberculous laryngeal involvement with no hoarseness at all.

William F. Hulse in an article appearing in the December issue of the *American Review of Tuberculosis* discusses this symptom when found associated with tuberculosis, the possible causes and the usual significance of the symptom. He says that the symptom of hoarseness should be taken only as "a valuable adjunct in the diagnosis of laryngeal tuberculosis and not as a classical sign or symptom". The hoarseness in laryngeal tuberculosis is often described as typical or characteristic, but he has not found this to be true; moreover, the vocal cords are not solely responsible for the quality and quantity of the voice. "The muscles of voice production", he says "should not be thought of as including only those which alter the position and tonus of the vocal cords". To these of the so-called intrinsic group he adds an extrinsic group. Changes in the voice may be due to either intrinsic or extrinsic factors or both.

In the author's opinion pain in tuberculous laryngitis is not frequent unless secondary infection has taken place, and hoarseness in this condition is often a protective measure when pain is present on phonation. Movement of the cords in certain types of laryngeal involvement causes such severe pain that a patient will speak with an altered voice

in order to attempt to keep the larynx in as neutral a position as possible. In tuberculous disease of the larynx the following causes and types of hoarseness are given: (1) partial or total fixation of one or both cords, the most common cause of longstanding hoarseness; (2) involvement of the arytenoid joints, the resultant hoarseness being usually persistent, even permanent; (3) involvement of only the cords, causing hoarseness through which the normal voice breaks from time to time; (4) formation of a mass of granulation tissue in the posterior commissure, producing more pronounced hoarseness than the causal factor seems to warrant (removal of tissue by cautery causes return to normal voice in a few days); (5) in exudative types of laryngeal tuberculosis involving the cords the hoarseness is uniform in contrast to the irregular hoarseness caused by the ulcerative and productive type of lesions.

Causes of hoarseness in tuberculosis not caused by specific involvement of the larynx are given as: (1) hoarseness caused by the mechanical irritation by coughing, in which the larynx shows marked injection with many dilated blood vessels, but no ulceration; (2) in cases with an associated rather severe bronchitis due to irritation, the secretion spilling over into the larynx and causing hoarseness from the resulting edema; (3) hoarseness caused by the thicker sputum in the chronic stage of disease becoming difficult to dislodge from between the cords; (4) hoarseness caused by various types of anomalies, either congenital or acquired. (5) hoarseness caused by the common cold, when it also affects the larynx, it being necessary to remember that tuberculous patients are no more immune to acute infections than are any other individuals. Hoarseness due to a cold will usually clear up in a week or two, and, in the author's experience, patients who are susceptible to repeated attacks of non-specific laryngitis, do not seem to be susceptible to the specific type. Bed-rest and collapse therapy in any form will usually relieve at least some of these types of non-specific laryngitis by reducing the quantity of the sputum. A patient who is hoarse and who does not cough and who has little or no sputum should be frequently examined to determine if possible the cause of the hoarseness.

The author enumerates several so-called extrinsic causes of hoarseness which are difficult to diagnose. These include: (1) nerves supplying both intrinsic and extrinsic muscles of the larynx may be affected by actual tuberculosis or by toxic absorption; (2) some early obscure central nervous system lesions occasionally manifest themselves by hoarseness; (3) tuberculosis in the mediastinal nodes may cause pressure on the recurrent laryngeal nerves;

(4) cervical lymphnode involvement may cause vagus nerve pressure, although hoarseness is rare in children whose tuberculosis is confined to the lymphatic systems of the lungs and cervical region; (5) hoarseness caused by too high pressures in the induction of pneumothorax, the mediastinum being displaced to the other side causing tension on the recurrent nerves; (6) hoarseness sometimes associated with tuberculosis in the extreme apex, when fibrosis has exerted tension on the upper mediastinum and the recurrent nerves; and (7) hoarseness is often present in patients whose general physical condition is poor.

It is emphasized particularly that only a small percentage of patients with an active tuberculosis ease of the larynx, and that the cause of hoarseness may be extrinsic as well as intrinsic. Nevertheless, the symptom, when it has a tendency to persist or recur, should be thoroughly investigated for the causative factor. In the examination of patients afflicted with active tuberculous disease it is safer to be even somewhat over-zealous in the search for the cause of certain symptoms than to be lax in any particular. Many cases of tuberculous laryngeal ulceration are rather readily curable under the proper procedure, and the earlier the diagnosis of the condition, as in any form of tuberculosis, the easier and quicker the eventual cure.

DENTISTRY

J. H. GUYON, D. D. S., *Editor*, Charlotte, N. C.

KERATITIS CAUSED BY ABSCESSED TEETH CURED BY THEIR REMOVAL

MANY reports have been made of cure of infective conditions of the eye, and probable saving of vision, by removal of dental foci of infection. Such a report¹, made recently, appears to bear out the importance of keeping this possibility in mind, although it is unlikely that many such cases will come under the care of any one ophthalmologist or any one dentist.

The typical branching corneal vesiculation of dendritic keratitis is usually associated in America with malarial infection. In the case reported, no malaria organisms were found.

Four first permanent molars were decayed beyond repair; the pulps exposed in the lower right and left. The roots of the upper right and lower left were partially covered with gum tissue. These diseased teeth had not been extracted because their presence was considered necessary to prevent the development of malocclusion.

1. E. Shapiro, D. D. S., and H. D. Coles, M. D., Chicago, in *Jl. Am. Dental Assn.*, August.

The 4 involved molars were removed under nitrous oxide anesthesia. A greenish yellow exudate oozed from the socket of the upper right first molar and as the remaining upper roots were extracted; and around the apices of the roots were small abscesses.

Bacteriologic studies, made from the extracted teeth, the cornea and the conjunctiva showed white colonies of a small gram-positive bacillus. No streptococci were obtained.

The postoperative complications were limited to a single, hard edematous area in the lower left molar region which prevented the patient from opening the mouth normally. The use of surgical packs and warm moist applications to this area reduced the swelling so that the mouth could be opened normally. No tenderness to pressure nor fever was noted.

One day later the branching corneal ulcer had healed although there had been no change in the symptomatic medication. The patient was discharged.

The report indicates that infected teeth are a probable focus in keratitis dendritica as medication of the cornea proved futile before the dental extractions. Healing of the eye within 48 hours after extraction furnished strong evidence that the focus of infection was the teeth. It would seem that prompt coöperation of the dentist and the physician saved the involved eye.

In cases of infection of the eye that do not respond to treatment, the ophthalmologists are having all foci of infection in the mouth cleaned up and are getting good results in many cases. It is just as important that pyorrhea be cured as it is to remove teeth with apical abscesses.

THERAPEUTICS

J. F. NASH, M.D., *Editor*, Saint Pauls, N. C.

THE TREATMENT OF ACUTE DELIRIA

A large percentage of restraint is due to lack of an adequate force of nurses, budget limitations in hospitals and the private resources of patients; we must choose restraint as the lesser of two evils. Patients will exhaust themselves more rapidly in restraint than if allowed to get up and wander about. When restraint is used nurses are required to loosen every two hours.

In cases of cardiac delirium one of the best remedies is $\frac{1}{4}$ to $\frac{1}{2}$ grain of morphine *intravenously*. As a rule morphine is not the best drug for excited or delirious patients. If the patient cannot sleep because of pain, morphine will pro-

duce the desired effect.

Hyoscine is uncertain. Bromides are too mild.

Barbital has a cumulative action if used over any long period. It may be desirable to omit all medication for 24 to 48 hours to see if the patient does not quiet. There is too much rather than too little drugging. The urine or blood should be tested for bromides and barbiturates.

Paraldehyde seems the best and safest hypnotic. If a patient takes it eagerly and seems to enjoy it, he is an alcoholic. Paraldehyde is the most widely used hypnotic in psychiatric hospitals, less used outside. If cannot be given by mouth, then either rectally with a small amount of milk to prevent irritation, or it may be given intravenously.

Another excellent hypnotic fallen into disfavor is chloral hydrate. As much as 30 grains may be given as a single dose, repeated in one hour if necessary. It is a milder drug than paraldehyde.

The reason is not clear but experience has shown that many restless, disturbed patients become quieter when given plain enemas.

The continuous bath at 96° to 98°, with the patient on a hammock suspended in the water for long periods, even days, is an efficient measure much used in hospitals.

The cold wet pack is often of great value. Sheets dipped in cold water are wrung out and wrapped around the patient. Blankets are then added outside the sheets. A hot-water bottle is placed at the feet and an ice-cap or cold cloths to the head. Do not continue for more than two or three hours, watching continuously for any signs of collapse.

An overactive febrile patient needs more liquids and food than the normal person, must supply at least 3,000 c. c. of fluid daily to prevent fluid loss, a person active or febrile still more. A minimum of 15 grams of salt is to be taken every 24 hours. Probably some calcium lactate. Ordinary studies of blood chemistry tell us little about salt loss. For persons finding salt unpleasant, enteric-coated pills are used.

Most of the author's excited and delirious patients, a large number in alcoholic deliria, were given two capsules of sodium chloride, 1 gram each, q. 4 h. during the first day. Orange juice with one tablespoonful of sucrose in each glass constituted the bulk of fluid given. Patients who vomited frequently could usually retain orange juice. Patients refusing to drink, if a little orange juice was spilled on their lips they would often take the rest. Salt and fluid often quiet without hypnotics. Pulmonary edema is likely from large amounts of intravenous saline, especially given rapidly. Hypertonic solution of sodium chloride, 300 c. c. of a 5% solution intravenously, had a quieting effect on the patients and then they would

ask for water.

A patient with much alcohol in his blood is given glucose and insulin and the alcohol will be eliminated at twice the normal rate. If will take glucose by mouth, give from 50 to 100 grams of glucose, and 10 to 25 units of insulin, repeated two or three times daily.

Vitamin A builds up the capacities of the organism to resist infection. Vitamin B, particularly B₁ and nicotinic acid, absence may cause mental disorders. In vitamin C deficiency delirium with scurvy may develop. Vitamins A, B₁, nicotinic acid and C—give in large doses. Vitamin B₁ has a fairly specific action on alcoholic polyneuritis and that with Korsakoff's psychosis.

Nicotinic acid seems to have a specific effect on certain severe deliria.

A patient who will not eat and whose stomach is not so inflamed as to make gastric feeding undesirable, may be placed in a camisole, a stomach tube by nose and kept in for several hours. The Levine tube is probably preferable. First 100 c. c. of saline solution, in 20 minutes 200 to 300 c. c. of water, in another 20 to 30 minutes this repeated. Giving large amounts causes risk of regurgitation, followed by asphyxiation or pneumonia. After giving 1000 c. c. of water give 300 c. c. of orange juice with 50 grams of glucose added: 25 units of insulin should be given at this time. The Levine tube is then withdrawn and restraint removed. As the patient improves tub therapy is discontinued and the patient is allowed to take a more liberal diet. Colloidal aluminum hydroxide may be continued as long as gastritis is present, in which case the diet must, of course, be bland. Salt is continued at the rate of 90 grains a day in salt tablets. Patients will ask for water and drink large amounts. Orange juice freely, insulin is continued in small decreasing doses for quieting and for utilization of carbohydrates. Large amounts of vitamins are continued.

PROTECTIVE VALUE OF BISMUTH IN SYPHILIS

BISMUTH compounds injected intramuscularly have been found¹ to protect against experimental syphilis in rabbits and against clinical syphilis in prostitutes. Sobisminol is effective by mouth in all stages of clinical syphilis, and controlled drinking of sobisminol solution by rabbits acts as a preventive of syphilis by inoculation.

Sobisminol orally should be comparatively safe for human beings, but it should be given under the supervision of a physician, clinic, or public health department, and the medication should be

controlled by frequent examinations and a chemical test for bismuth in the urine.

Human prophylaxis has not yet been attempted with sobisminol, but the possibilities of making such tests appear practically feasible on special groups. A tentative outline for this is suggested.

A complete prophylactic attack on syphilis in a country as a whole should include, in addition to premedication and postmedication, the following measures favored by French physicians: (1) Moral prophylaxis, (2) sanitary education of youth, and (3) laws to provide compulsory physical examination before marriage. Drug prophylaxis, of course, is only one means of combat in the general warfare on syphilis.

This piece of investigative work looks promising. It seems probable that this may be an effective element in the nation-wide crusade against syphilis. Developments along this line of study should be watched with interest and applied in our practice.

OBSTETRICS

IVAN MARRIOTT PROCTER, M.D., F.A.C.S., *Editor*

APNEA NEONATORUM

ALL of us want to improve our obstetric results. A recent article gives us some valuable points.

The author¹ says certain obstetric terms are so inept that they lead to incorrect thinking and even an erroneous concept of the condition designated. Referring particularly to the derivation of asphyxia neonatorum, he states that the term comes from the Greek and means not to throb, literally an absence of pulsation. Galen used it to describe the state of an artery distal to a tourniquet and as late as 1778 the word was being used in a broader sense to convey the idea of apparent death, as from drowning. A much more important objection to the term is that obstetricians have commonly come to use it to describe failure of a baby to breathe at birth, whether the cause be a lack of oxygen, cerebral hemorrhage, congenital defect or what not? A few physicians entirely ignore the gravest cause of apnea, which is birth trauma, as well as the commonest cause of temporary apnea, which we see in modern obstetrical practice, due to narcosis. The term apnea neonatorum is merely descriptive and does not refer to etiology. It is preferable to the term asphyxia, which should be limited to such conditions as prolapse of the cord and premature separation of the placenta, which prevent proper oxygenation of the blood.

1. P. J. Hanzlik *et al*, in *Am. J. Syph., Gonorr. & Ven. Dis.*, St. Louis., July 1940

1. J. Eastman, M. D., Baltimore, in *Am. Jour. Obs. & Gyn.*, Oct. 1940.

Etiology and Prevention

Cerebral Hemorrhage—The most common cause of fatal apnea at birth is cerebral hemorrhage, the greater number from the trauma of operative delivery. Newborns show a special tendency to bleed, and it seems probable that this diathesis plays an auxiliary role. During the last two years Hellman and Shettles of Johns Hopkins Hospital have explored the possibility of raising low plasma prothrombin of newborn infants by the administration of vitamin K to mothers in the prenatal period. The prothrombin level has been raised when vitamin K was given four hours before delivery. Massive cerebral hemorrhage of birth trauma could not be so prevented, but the commonest minor hemorrhage from the subtentorial space may be reduced in this manner. Hellman and Shettles after administering vitamin K to 500 expectant mothers concluded that the procedure reduces the incidence of all types of hemorrhage in the newborn.

Narcosis—The commonest cause of temporary apnea neonatorum is anesthesia and analgesia. In the experience of Eastman nitrous oxide-oxygen pushed without ether to the point of surgical anesthesia is a more frequent offender than realized, because of the resultant fetal anoxia. The time element is important and pure nitrous oxide administered for four or five breaths to produce analgesia probably causes less anoxia than a mixture of 85:15 continued for five minutes. It seems plain that when nitrous oxide-oxygen is given a woman in labor in concentration of 90:10 or stronger over a period longer than five minutes, marked degrees of anoxia are produced in about one baby out of three. The anoxia may not prove harmful, but occasionally it leads to profound and even fatal apnea. For adequate saturation of fetal blood with oxygen the mother must receive 15 parts of oxygen to every 100 parts of nitrous oxide; if such a mixture does not suffice for anesthesia, one should then give ether in addition. Babies withstand long labors poorly and if an operation is necessary in such cases give ether on an open mask to insure liberal oxygenation of the child's blood. The same is true in breech extraction, where there is a tendency to fetal anoxia due to the pressure of the child's head and shoulders upon the umbilical cord. Ether passes directly through the placenta and naturally exerts an anesthetic effect upon the child and it is this influence apparently and not anoxia which causes an occasional etherized baby to breathe slowly. Time and gentle stimulation usually bring satisfactory reaction in these babies, and the prognosis is always better than that of apnea the result of profound anoxia.

The most controversial question in modern obstetrics is: Does the apnea of the newborn, which

commonly follows the use of a modern analgesic program, jeopardize the baby enough to condemn the employment of these drugs? The answer is that sedatives given in amnesic doses do inhibit the onset of respiration in 40 to 60 per cent of babies. The duration of apnea is from a few seconds to half a minute. Not very infrequently the effect of the analgesic drug has superimposed upon it the effect of inhalation anesthesia. The impression of the author is that the ultimate outcome for mature babies born under analgesia intelligently administered is just as good as it is for those born under no analgesia. Respiration in the premature baby is at best a precarious business and should not be hampered by the use of depressant drugs. The necessity for difficult forceps operation arises less frequently in the patient who has been given sedation. This is a result of rest for the patient and lack of demand that the obstetrician interfere.

Anoxia—If oxygen determinations are done on the blood from the umbilical vein at birth, it will be found that most apneic babies (narcosis excluded) show very low oxygen levels. Whether the anoxemia is due to primary conditions, such as prolapse and obstruction of the umbilical cord, or to one of many other causes can not always be determined; but the fact remains that most apneic babies are anoxic and this should be taken into consideration in our plan of treatment.

Prematurity and Congenital Malformations—Although prematurity is the most common cause of neonatal death, it is seldom responsible for actual apnea at birth unless narcosis or cerebral hemorrhage be superimposed.

Treatment—Eastman and Kreiselman in treating apnea and anoxemia consistently failed to get any satisfactory results with intravenous or intramuscular injection of alpha-lobeline, metrazol or coramine; on the other hand, a few insufflations of oxygen produced immediate breathing. In their opinion, the one treatment of apnea at birth is insufflation of 100 per cent oxygen. The attempt to stimulate respiration by the addition of carbon dioxide is not only futile but may be dangerous.

EDITOR'S COMMENT

The problem of apnea is twofold—prophylactic and therapeutic. Close observation of the fetal heart throughout labor, especially the second stage, is necessary. Take active steps when indicated, but do the mother no harm. Manage the breech and forceps extraction with gentleness. Difficult operations usually mean ill-advised or ill-timed operations.

Therapy:

1. Remove mucus from mouth and pharynx as soon as the head is born.
2. Handle baby gently. Do not use forceful

manipulation, swinging, compression of chest, et cetera.

3. Keep warm—heater, blankets, or warm bath.
4. Remove mucus from trachea gently with soft rubber tracheal catheter.
5. Give inhalations of 100 per cent oxygen.

GYNECOLOGY

G. CARLYLE COOKE, M. D., *Editor*, Winston-Salem, N. C.

THE MALE MAY HAVE TRICHOMONAS INFECTION

A few years ago, while making an extemporaneous dissertation before the Tri-State Medical Association the writer made the statement that trichomonas vaginalis infections are easily cured. The statement drew considerable criticism because of the prevailing opinion that it was difficult to handle. After these years of experience since that statement, it still holds true. However, the chance reinfection at that time had not been duly considered.

Within the last year or two, many cases have been seen to clear up of symptoms and organisms, to return later with renewed activity. At first it was assumed that there had been no cure, and faith in the common starch treatment was badly shaken. Recent investigations showed that the male may harbor the organisms almost as frequently as the female, that the trichomonas may be found in the urethra, in the prostate, in the seminal vesicles, and even in the blood of the male. It then becomes apparent that these cases were not failures of cure but failures in preventing reinfection. The problem of curing the wife of venereal diseases takes in full consideration the treatment of the husband. It is only now, however, that the importance of this phase of treatment of trichomonas vaginitis infection is appreciated.

Some of the failures in cures in women have been due to the lack of consideration of the areas of possible infection—the urethra, the external folds of the labia majora, and the rectum. When these areas are thoroughly cleansed and the vagina filled with common corn starch, the disease is readily eradicated by from 4 to 8 daily treatments.

These cases will remain cured if genital hygiene is maintained and the male partner is free from the organism. In other words, it becomes highly essential and desirable that the gynecologist be alert to this possibility and inform his patients and insist that their partners have treatment. In other words, more evidence of closer coöperation between gynecologist and urologist or gynecologist and family doctor, as the case may be.

BENIGN GYNECOLOGIC HEMORRHAGES

THE author¹ covers the subject well and gives a helpful discussion of the various phases of benign uterine bleeding. Uterine bleeding other than normal menstruation is one of the most frequent conditions that the general practitioner has to contend with and it is important to make correct diagnosis as to whether benign or malignant. The following classification is interesting and instructive:

1. Functional hemorrhages as a result of endocrine dysfunction and imbalance occurring at puberty, during the childbearing period and at the menopause when there is no demonstrable lesion.
2. Hemorrhages associated with neoplastic diseases, including cervical and corporal polyps, myomas, adenomyomas and ovarian tumors.
3. Hemorrhages associated with inflammatory disease, as salpingitis, oöphoritis and tuberculosis.
4. Bleeding from retained gestational products after abortion or full term delivery, and tubal pregnancy.
5. Intraabdominal hemorrhage as a result of ectopic pregnancy, endometriosis and ruptured ovarian cysts, adenomyomas.
6. Uterine bleeding from miscellaneous causes, such as cervicitis with erosion, subinvolution, hemophilia, hypertension and postoperative hemorrhage.

The author deals at length with functional hemorrhage, stressing the part played by the endocrines, the importance of biopsies and early treatment, as indicated. He concludes by cautioning women and physicians as to the danger of regarding irregular bleeding at the menopause age as normal. In every case it should be considered as possibly malignant until this is disproved. It is a presentation which should be read and studied by every practitioner who deals with this type of patient. Perhaps the most frequent and the most serious errors of the general practitioner come from neglecting to make certain examinations, especially vaginal and rectal.

1. G. G. Ward, New York City, in *J. A. M. A.*, Nov 9th 1940.

GENERAL PRACTICE

WALTER J. LACKEY, M. D., *Editor*, Fallston, N. C.

TREATMENT OF INTRACTABLE PAIN

EVERY practitioner has patients whose pains have taxed his mental and their own financial resources. A small-town doctor¹ in the Middle West writes encouragingly (and not *too* enthusiastically) on this subject.

The conditions treated were diagnosed as myalgia, neuritis, neuroma, arthritis, lumbosacral strain,

1. R. A. Youngman, Falls City, in *Neb. State Med. J.*, Jan.

strain of dorsal spinal ligaments.

Two different solutions were used. Solution A had following formula:

Isoamylhydrocupreine	0.005 gm.
Ethylaminobenzoate	0.150 gm.
Benzyl alcohol	0.250 gm.
Oil sweet almond	5.00 c. c.

This solution produces local anesthesia lasting as long as 3 months. It may produce a slough if injected subcutaneously.

Solution B is not a local anesthetic. It is an aqueous solution of the soluble salts of the volatile bases of the plant *Sarrocenia purpurea* (pitcher plant.) To each 5 c. c. of this solution is added 33 mgm. of crystalline vitamin B. Both of these solutions are injected intramuscularly, from 1 to 10 c. c. at a treatment. Usually from 3 to 5 treatments are required for satisfactory relief. Ordinarily some relief is obtained after the first injection if the case is one which is going to respond to treatment. As far as I know there is no definite rationale behind the use of this solution.

I inject the solution directly into the tender areas in the muscles or ligaments, whichever the case may be. A total of 5 c. c. may be used at one treatment, the amount given being divided among 2 or 3 points of injection. If the area involved is large and the nerve supply is readily accessible it is advisable to infiltrate the nerve also.

Six of the 11 patients were given nearly complete relief; in the unsuccessful cases not even partial relief was obtained. While the percentage of cure in this series is not high, it should be pointed out that attempts had been made to treat some of these cases by other methods without success and one patient who had become resigned to a prolonged period of suffering was relieved.

After some experience with this method I feel that the physician would soon learn which cases respond satisfactorily to this treatment.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

PENETRATING AND NON-PENETRATING FOREIGN BODIES OF THE CORNEA

THESE foreign bodies are either attached to or embedded in the substance of the cornea. The majority are embedded when seen by an oculist. There are six common causes which serve to drive a foreign body into the substance of the cornea, any one of which may be a sufficient cause alone or all may be combined in the etiology.

The foreign body may be driven with sufficient

force to penetrate the cornea on contact, may be hot enough to do so, or its chemistry may produce it. It may become embedded by forceful closure of the lids, by briskly rubbing the eyeball with the finger over the lid or by the attempt of a friend or a fellow worker to remove it by cumbersome means and rough manipulation.

At the time of the injury the great majority of foreign bodies are simply attached and because of the acute pain produced by their presence forceful closure of the lids and rubbing the globe with the finger serves as the most important factor in causing the foreign body to become embedded. All foreign bodies of the cornea are to a degree embedded, by virtue of the above factors at work. If they are allowed to remain in situ for 24 to 48 hours. For the most part these bodies are from pinpoint to pinhead in size. Those almost microscopical and semitransparent, before a brown-black iris, are difficult to locate. Staining the cornea and using the slit lamp is sometimes needed. As a rule these bodies are diamond-shaped with sharp angles if of the cinder or sand type, emery-wheel particles and the like; flat or semi-flat with sharp serrated edges if of shale or rusty iron. In recent years a type frequently carried by the wind into the eye from the street, is a small chip of enamel or paint from automobiles naturally of any color or shape. In a case recently seen the body was the spear-point, 1-6 in. in length, of a briar lying in the substance of the cornea of a huntsman.

If the foreign body is over the apex or the upper middle third of the cornea pain is greater because the upper lid is in more or less constant contact with these areas.

In your own and the patient's interest, and that of insurance carrier and employer, take the visual acuity of each eye and do a fundus examination. Get the vision in each eye upon termination of the case, and if a refractive error is present do a manifest refraction to reduce vision to maximum efficiency with the proper lenses. This does not mean to prescribe glasses. This is for the record. If the patient has glasses determine their measurement and the visual efficiency with them. Determine the excursion of the eyes and the muscle balance and any preëxisting condition of either eye. This in the interest of good work and a comprehensive record of the case.

In removing the foreign body the work is easier with patient prone, the oculist standing behind the head. Instill a few drops of any good local anesthetic, cocaine excepted, and after 3 minutes the eye is under sufficient anesthesia to proceed. Pontocain is to be preferred because it causes no discomfort, no reaction either on the mucous membrane or the pupil and allergic reactions are rare.

Irrigate the sac before and after removal of the foreign body with zinc sulphate $\frac{1}{4}$ gr., boric acid and borate of soda 10 grs., to 1 oz. of distilled water. Have a sufficient assortment of good sharp spuds, gouges, small round curettes and a dental burr to cleanly remove the foreign body and the stain left in the cornea from the presence of the embedded foreign body. It should be remembered if a stain is present after removal of the foreign body it causes considerable irritation and the job is only half done. If the stain or rust is firmly adhered at the initial operation requiring much trauma to the corneal tissue to remove, it is best to fill the sac with boric acid ointment and occlude the eye. Twenty-four hours later it will have become loosened sufficiently to remove with ease. The foreign body should not be scraped out. The instrument should be inserted beneath it and the body raised out.

The eye should be covered for the first 24 hours following the removal of an embedded foreign body, longer if healing is not complete as witnessed by staining the cornea to prove it. It is seldom necessary to use an eye speculum or fixation forceps in these cases. The globe can be held practically fixed with the sterile index and second finger of the operator, using the index finger to elevate the upper lid and at the same time apply moderate pressure at the upper and outer quadrant of the sclera as the second finger slightly depresses the lower lid with pressure applied at the lower and inner quadrant in holding the right eye with the left hand. The position of the fingers on the globe is reversed if on the left eye.

Children under 12 usually require a general anesthetic for safety of the eye where the foreign body is embedded.

If a physician has not the requisite instruments and proper lighting and a foreign body is embedded in the cornea it would be in the interest of all concerned that he fill the eye sac with any simple bland oil or ointment, occlude it and direct the patient where proper facilities are to be had.

A mydriatic is rarely indicated in this type of injury and if so it is because too much trauma has been produced to the cornea by the operator.

The writer has strictly followed these simple procedures in these types of cases, as outlined, for the past 16 years without a single infection and in an industrial area where this type of injury is frequent.

Dr. Wilmer said to one of his assistants who removed a foreign body from one eye and took no stock of the condition of its fellow, which later proved to also have a foreign body in it: "Search carefully the injured eye for more than one foreign body and after removal of one or all therein search the fellow eye likewise; finally, evert both

lids of each eye and inspect the retrotarsal folds for a foreign body."

HOSPITALS

R. B. DAVIS, M. D., *Editor*, Greensboro, N. C.

WHY TAX THE SICK MAN?

For the last few months there has been considerable agitation in our State concerning the taxation of eleemosynary institutions. The hue and cry has been that these institutions have property which is rented or utilized in competition with private property. It is to be admitted in the beginning that this is true; however, if we would take stock of the benefits derived by the private property owners because of the location and operation of such institutions it can be readily seen that the private-property owners are much ahead of the game.

The three main eleemosynary institutions which will suffer most are the churches, colleges and hospitals. No sane man would argue that property is more profitable in a city where there are no churches. It is easy to see that the good influence of the church in a city greatly enhances the morale of the citizenship. This in return keeps the tax figure down much lower than it would be otherwise. Law making and law enforcement, coupled with the expense of caring for the criminal, all would be greatly increased were it not for the good influence of the church. For this reason the private-property owners should gladly encourage church activities and expansion.

When the question of colleges is discussed here again the private-property owner is benefited. If the eleemosynary colleges were all closed the demand upon the state for increased college facilities would be so great that the tax rate for this item alone would treble any taxes which could possibly be raised from the now existing organizations.

This paper is essentially concerned, however, with the taxation of the hospitals in our State. Private capital would not purchase a piece of property in a state where there were no hospitals. Experience has shown that where the state, city or county attempts to furnish hospitalization themselves for the indigent sick, invariably the per capita cost exceeds that of those hospitals operated outside of political control. To anyone who is interested a proof of this statement can be had from the Duke Endowment report. This being true, it is difficult for those of us who are operating hospitals in the State to understand the attitude of the law-makers and courts of "justice." It is the sincere belief of the writer that this matter has never been studied in its true light and it is hoped

that effort on the part of the hospitals will be made for a true analysis of the hospital problem of taxation in North Carolina.

The foregoing facts would suffice as reasons for eleemosynary institutions to operate tax-free. However, in the case of the hospitals this is by no means all there is to be put forward in favor of such exemption.

The sick man goes to the hospital. It is the sick man's money which takes care of the hospitalization. The sick man cannot work. His income is greatly reduced if not completely cut off. He is of all people often the least able to pay for even the necessities of life. This fact is evidenced on every corner for jurists and laymen alike demand that the hospitals play the part of the good Samaritan at all times and under all circumstances regardless of the cost. Therefore, what taxes are paid by the hospitals have to be derived from the income of the sick man. If the sick man cannot pay for the necessities of life then it does seem that this is a very poor source from which to derive taxes.

If a man gets into civil or criminal difficulty and is not able to employ counsel to defend himself the great State of North Carolina will employ such counsel for him. Further, it will furnish a tax-free court house to try him in. This seems altogether human and just and I find no fault with the system. Nevertheless, I cannot shut my eyes to the injustice, the unreasonableness and the hard-heartedness of the method of taxing the institution which is supported by the sick man's money. In the final analysis this extra taxation will be added to the hospital bill of every patient.

I wish to invite a careful investigation and analysis by those in authority concerning this humanitarian problem. No institutions on the face of the green earth render a service to all mankind every day of the year more willingly than do the hospitals of the land. The trustees and the employees all need the sympathetic coöperation of the public at large and especially that of those having the taxing power.

In order to partly alleviate this expense of sickness the hospital people have organized and are now maintaining in the State of North Carolina two good non-profit hospital insurance corporations whose sole purpose it is to help the well man prepare to take care of himself when he is sick. The great leaders of our State will surely do no less than to sympathize in an economic way with the sick man's pocketbook. I call upon them to use their influence at all times and under all circumstances to lighten the burden of the hospitals which are so hard pressed for money to meet the great emergencies which arise in the sick and in-

jured human body. I cannot believe that they will do otherwise.

THREE-QUARTERS OF A CENTURY FOR PARKE, DAVIS & COMPANY

The year 1941 marks the Diamond Anniversary of the founding of Parke, Davis & Company. A firm which had its inception in a small drug store in the City of Detroit, has become the world's largest maker of pharmaceutical and biological products.

From the very beginning, research work with the object of making available to pharmacists and physicians medicinal preparations of the highest degree of accuracy has been an important feature of the firm's work.

In the early '70's, pharmaceutical progress meant the discovery of new vegetable drugs. Energetic—and extensive—explorations gave to the medical profession such valuable and widely used drugs as Cascara and Coca. Then, in 1879, came one of Parke-Davis's greatest contributions to pharmacy and medicine—the introduction of the first chemically standardized extract known to pharmacy. Desiccated Thyroid Gland, the first endocrine product supplied by the Company, was introduced in 1893. One year later, Parke-Davis established the first commercial biological laboratory in the United States. In 1897 came the introduction of the first physiologically assayed and standardized extracts.

In the present century, progress of the Company has continued apace. An aggressive program of research has been zealously pursued, marked by the introduction of such important medicinal products as Adrenalin, Ventriculin, Theelin, Pitocin, Pitressin, Mapharsen, Neo-Silvol, Antuitrin-S, Meningococcus Antitoxin, Dilantin Sodium, and many others.

The Company's home offices and research and manufacturing laboratories in Detroit occupy six city blocks on the Detroit Riverfront.

A beautiful farm of 700 acres, known as Parkdale and located near Rochester, Michigan, about 30 miles from Detroit, is utilized for the production of antitoxins, serums and vaccines, and for the cultivation of medicinal plants.

In addition to its Detroit headquarters, branches and depots are maintained in important cities throughout the country, the list including Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Dallas, Denver, Indianapolis, Kansas City, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, and Seattle.

Branches are located in London, England; Sydney, N. S. W.; Walkerville, Ontario; Montreal, Quebec; Toronto, Ontario; Winnipeg, Manitoba; Bombay, India; Havana, Cuba; Buenos Aires, Argentina; Rio de Janeiro, Brazil; and Mexico City, Mexico.

Through the use of full-pages in leading national magazines Parke, Davis & Company are carrying on an advertising program that has attracted wide attention. As might be expected, their advertising is ethical and distinctive. They make no direct attempt to sell their products to the public by means of this publicity. In a well-considered effort to render a valuable service to the medical profession, they are running a striking series of messages based on the "See Your Doctor" theme, and physicians throughout the country are constantly experiencing evidences of the results of this program.

The Post Graduate Surgical Assembly of the Southeastern Surgical Congress will be held at Richmond, Virginia March 10th-12th. The John Marshall Hotel will be headquarters.

SOUTHERN MEDICINE & SURGERY

Official Organ

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Offerings for the pages of this Journal are requested and given careful consideration in each case. Manuscripts not found suitable for our use will not be returned unless author encloses postage.

As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

THE TRI-STATE MEETING NEXT MONTH

FEBRUARY 24TH—25TH

PREPARATIONS for the forty-third meeting of this body of doctors are just about complexed. There is every assurance of the kind of meeting you will enjoy while you are in attendance and enjoy more as you give your patients the benefit of the information you received in exchange for information you imparted.

Our president will inform us on the latest things in obstetric care.

Guest speakers will come from Lincoln, from New York, from Baltimore, from Augusta and from Rochester, each bringing instruction in the best ways of getting sick folks well, then keeping them well.

A number of the men conveniently near will give clinics, in which the participation of our guests speakers is anticipated.

These clinics will cover a variety of disease conditions encountered in every-day practice, manifesting themselves by a great diversity of symptoms and findings. Our Greensboro members have extended themselves to make this feature particularly instructive and attractive. Some original work will be presented.

Addresses, clinics and essays are arranged with the end in view of dealing with sick persons as wholes.

Other members will discourse on wound healing; cancer and its cure (*i. e.*, its care); diagnosis of bleeding in the brain; postoperative distention; treatment with plasma; pulmonary hemorrhage; blindness prevention; hand injuries; toxemias of pregnancy; breast tumors; arthritis; skin grafting in orthopedic conditions; gunshot wounds of the pregnant uterus; thyroid disease conditions; obscure but important eye conditions; and, of course, the sulfonamides.

All survivors of the group that gathered for the first meeting of the Association, held at Charlotte in 1899, are being urged to grace the occasion as special guests. One of this group, Dr. Paul Barringer, of Charlottesville, has died since these invitations were sent out.

Another of them promises to discuss the appendicitis of 43 years ago and that of today.

It's easy to get about now. You will want to get to Greensboro taking along a doctor neighbor. You will want to attend all the sessions. Our influenza promises to be past by the time of the meeting. Let nothing interfere with your plan to attend and take an active part.

CANCER OF THE STOMACH

SEVERAL of the recent Reports of the Staff Meetings of the Mayo Clinic have devoted space to the kind of cancer which is most insidious and as to the male, most common.

Stomach surgery begins with the work of Billroth, so it is fitting that this dealing with the subject should be introduced with a brief sketch of that great surgeon.

Charles Albert Theodor Billroth was born at Bergen, Norway, in 1829. He studied medicine in Germany and was graduated from the University of Berlin in 1852. After brilliant service as assistant in Langenbeck's clinic in 1860 he was made Professor of Surgery at Zurich, where he became a permanent resident for seven years. He then went to Vienna, where he remained as professor of surgery until his death in 1894.

Billroth was a master operator as well as a keen clinician; he did a vast amount of research in the laboratory and in the hospital. He was a great teacher, and had the faculty of inspiring enthusiasm and energy. He was an accomplished musician—the author of a large volume on music.

In addition to his many contributions in the field of gastric surgery, he performed the first resection of the esophagus and the first laryngectomy for cancer. He trained Mikulicz, Wolfler, von Eiselberg, Czerny and many others. Billroth's first successful partial gastrectomy was performed on Teresa Haller, who had a polypoid cancer in the distal portion of her stomach. One-third of the stomach was resected and gastro-intestinal continuity was re-established by the Billroth I type of procedure. The patient was dismissed from the hospital, apparently in good health, 22 days following her operation. She succumbed in four months from "cancerous degeneration of the peritoneum." Billroth performed two similar operations in 1881 but both patients died during the early postoperative period. The following year Wolfler made a gastric resection and the patient lived for 1½ years following the operation.

By 1886, 37 partial gastrectomies for cancer of the stomach had been reported, with an operative mortality rate of 73%. Billroth performed eight of these, Czerny four, and 25 were done by 25 surgeons. The mortality rate for the eight cases was 37%. It was thus demonstrated that: one, partial gastrectomy could be done and the patient survive; two, there was some possibility of longevity following such removal; and three, some degree of special training of the surgeon resulted in lowered operative mortality. Only patients who were in the most unfavorable condition were operated on in this period. The early diagnosis of cancer of the

stomach was impossible.

W. J. Mayo's early writings on the subject were quoted and requoted, and his illustrations were reproduced in most of the standard textbooks of the time. His first report was in 1894 and hardly a year passed thereafter that he did not make additional reports. That made in 1910, of 627 operations for gastric carcinoma, with resections in 36% of the cases and a mortality rate of 12% reveals his great accomplishments in this field at this early date. C. H. Mayo and Balfour also contributed largely. Also prominent in this early work were Péan, Kocher, von Winwarter, von Eiselberg, Hemmeter, Doyen, Witzel, Hartmann, Mayo-Robson, Bland-Sutton, Cunéo, Bull, Gross, Keen, Finney, Ochsner, Moynihan and a number of others.

Cancer of the stomach is by far the commonest malignant growth. More persons die as the result of a primary malignant lesion in this location than anywhere else in the body. Two-and-a-half times as many persons died in this country from cancer of the stomach during 15 years of peace as were killed and died of wounds in all of the wars in which the United States has participated. Emphasis must be placed, therefore, on the necessity of early recognition of this disease, for which surgery, early, is the only hope of cure. The possibility of the presence of malignant disease must be considered whenever a patient complains of symptoms referable to the stomach which do not respond promptly and permanently to simple remedies. During the period 1937-1939 30% of all patients seen with carcinoma of the stomach underwent partial resection, whereas 15 years previously in only 20% could promise be made of any reasonable chance of improvement justifying this procedure.

The fact must be impressed on physicians and laymen that there is no clinical syndrome typical of carcinoma of the stomach.

In the period 1907-1938, 10,890 patients for whom a diagnosis of malignant lesion of the stomach had been made were examined at the clinic. Of these, 6,352 underwent operations—2,840 were resections. The mean age of patients who had carcinoma was 55. There were 3.5 times as many males as females in this group. The lesion was removable in 44% at all ages. Dyspepsia and disturbance of gastric motility, whether only mild fullness after meals or vomiting, was present in half of the cases, regardless of whether the gastric lesion was removable or nonremovable.

Eighteen per cent had had symptoms for 5 years. How many of these symptoms were due to the cancer is unknown.

Eighty per cent of those treated as ulcer before

coming to the clinic, responded as to be expected in ulcer cases. Among those who had a palpable abdominal mass, the lesions of 40% were removable, whereas among those whose rectal or cervical glands found by the clinician suggested metastasis, only 20% had resectable gastric lesions. The group who had no abdominal mass, no evidence of rectal metastasis and no evidence of cervical metastasis: rate of removability was 50%.

Since the advent of diagnostic roentgenologic study of the gastro-intestinal tract, in that group in which lesions were removable, a definite diagnosis of cancer was made in 75%. In an additional 13% of cases there was some gastric lesion. In 99% of cases in which the lesions could be removed, the roentgenologists reported some type of gastric lesion. The roentgenologist should be given the opportunity to examine any patient more than thirty years old who presents reasonably indicative evidence that he has digestive disease.

Few of the cases the radiologist thought inoperable were surgically explored.

In the period 1907-1938, the diagnosis of malignant lesion of the stomach was made at the Clinic for 10,890 patients; 42% of these patients either could not be operated on, or left the Clinic without being operated on; 58% were subjected to surgical exploration. Of these the lesions of 45% proved to be removable (of the original total group 26%). The hospital mortality rate for the 2,840 patients for whom resection was performed was 16% (this including those in which total gastrectomy was performed). For 16% of the patients who underwent exploration, a palliative operation only, such as gastro-enterostomy, was performed, and for these the rate was 12%. For those for whom exploratory laparotomy only, 4%—a figure sufficiently low to warrant operation in any case holding out any reasonable hope of its proving of advantage to the patient.

The 5-year survival rate after resection is 29%—adjusted for the normal death rate, 32%; 10-year rate 20%—adjusted for the normal death rate, 25%. For patients whose symptoms had been present for less than a year, the 5-year survival rate was 25%; whereas for patients with symptoms for more than a year, the 5-year survival rate was 32%.

This accurate, detailed report on a large number of cases of a common and generally fatal disease should stimulate all doctors to be more alert to find the cases of stomach cancers of their patients early.

The report appeals as the most definite statement of the case to be found. The facts presented are encouraging. The advice offered is convincing.

SMALLPOX IN THE UNITED STATES

THAT there has occurred even one case of smallpox in the literate world in the century just past is proof positive that Carlyle's observation that people are "mostly fools" has foundation in fact.

A Public Health Report just out shows that with all our muddling as to this disease, somehow we are having fewer cases.

In the 20-year period from 1900 to 1919 three-quarters of a million cases of smallpox were reported in the United States, and in the two succeeding decades the number totaled 700,000 cases, 75 per cent of them 1920-1929. During the period 1900-1919, 11,435 deaths from this disease were recorded; from 1920 to 1939 5,337, 90 per cent of which occurred from 1920 to 1929. Also there has been a progressive change in the type of smallpox during the past four decades. The mild or alastrim type of smallpox may have originated in South Africa¹. It appeared in the United States in 1896, apparently entering Florida, from which locality it spread rapidly to all parts of the country.

The malignant and mild forms may represent two separate strains of the virus, and, although exhibiting some variations, the mild form bred true with no evidence of reversion to the malignant form. However, both types have been reported in the same community at approximately the same time.

Smallpox incidence has been higher in the North Central States and west of the Mississippi River. Except for sporadic cases or small isolated outbreaks the disease has practically disappeared from the New England, Middle Atlantic, and the northern tier of the South Atlantic States. The incidence in the remainder of the South Atlantic and East South Central States has also declined to a very low level in recent years.

In the eastern part of the United States the disease has practically vanished. In many of the Eastern States a large proportion of the population has been protected by a continuous program of vaccination year after year. It is worth noting that where laws requiring vaccination for school attendance have been in force for a number of years smallpox has practically disappeared, while nearly all of the cases reported in recent years have occurred in the sections where there are no such laws.

An explanation is offered for the mildness of recent outbreaks.

It's relieving to learn that almost no cases have occurred recently in the South.

¹ C. C. DAUER, M. D., *Epidemiologist*, D. C. Health Dept. in *Public H. Reports*, Dec. '40.

2. Chapin, C. V., and Smith, J.: Permanency of the mild type of smallpox. *J. Prev. Med.*, 6:273-320 (1932).

ARTIFICIAL INSEMINATION IN THE UNITED STATES

THIS journal has received from the National Research Foundation for Eugenic Alleviation of Sterility a copy of a recent survey of Artificial Insemination as practiced in the United States. The Foundation is desirous of having all workers in this and related fields send in their results as they become available. The data are to be released to all who may need them and doctors are urged to draw upon it whenever necessary.

This stock-taking of the results to date of attempts at artificial insemination will prove a revelation to most of us. That nearly 10000 children have come into the world alive in the United States as the result of bringing the ovum and spermatozoön together by art other than the oldest of arts is indeed astounding news.

Of the 150,000 doctors in the United States, one-fifth were sent questionnaires; 7,642 doctors sent in replies; 4,049 reported successful results with A. I.; 2,478 physicians reported that they had never used A. I.; 1,115 physicians failed to obtain pregnancies by A. I.

Census of children produced by artificial insemination in the U. S. to June, 1940.

Total number of live children born of A. I., 9,238

Total number of pregnancies initiated, 9,489

Result of A. I. using husband (temporary sterility) 5,728

(a) Number of boys, 3,623

(b) Number of girls, 2,105

Result of A. I. using donor (absolute sterility of male) 3,510

(a) Number of boys, 2,060

(b) Number of girls, 1,450.

Mothers having more than one pregnancy by A. I., 1,357

Multiple pregnancies in series, 3 sets of twins

The number of surgical operations (to effect pregnancy) avoided, 382

Ratio of total pregnancies to surgical operations prevented, 24.8 to 1.

The question "What was the average number of inseminations employed to effect pregnancy?" was answered as follows:

(a) The 1115 who failed to obtain pregnancy by A. I. 50 gave no specific number of inseminations.

1,065 physicians answered as follows:

740 tried one insemination

111 two inseminations

91 three

83 four

7 five

33 six

(b) The 4,049 successful physicians:

3 pregnancies resulted after one insemination

17 two inseminations

409 three

61 eight

897 nine

4312 12

1916 14

1003	15
367	18
139	20
241	21
124 physicians reported success after more than 21 inseminations.	

1 physician reported that pregnancy was effected after the 22nd. insemination.

The greatest number of physicians reported pregnancies after twelve inseminations which varied three inseminations for four months; four inseminations for three months; or two inseminations for six months. A few varied the procedure slightly over the twelve inseminations.

Geographical distribution of children sired by A. I. as reported by physicians was:

Central	2,602
Atlantic	2,997
New England	1,514
Pacific	617
Mountain	96
Southern	1,663

Analysis of physicians' replies by geographical sections:

Central	2,389
Atlantic	2,520
New England	930
Pacific	302
Mountain	124
Southern	1,377.

Total number of miscarriages and abortions, 217

Percentage of total number of pregnancies, 2.3

Incidence of miscarriages and abortions in so-called normal patients, 10 to 20%

Total number of extra-uterine pregnancies, 22

Intravaginally inseminated, 2

Intracervically inseminated, 11

Intrauterinely inseminated, 9

Percentage of total number of pregnancies, 0.2

Incidence of extrauterine pregnancies in so-called normal patients, 1.3%

Number of inseminations where some solution was added to specimen, 3,831

Percentage of pregnancies in which some solution was added to specimen, 40.3

Number of "flare-ups" reported through uterosalpingography, 44

Type of flare-up:

Acute salpingitis, 11

unilateral, 7

bilateral, 4

Pelvic abscesses, 3

Marked abdominal cramps, 28

Pelvic peritonitis, 7

Dermatitis venenata, 5

Number of flare-ups cited above requiring operative interference, 9

Other incidents: Retention of the oil in diseased salpinx, 6.

To many young couples who have been vainly hoping for children this will be encouraging news. Their doctors will be stimulated to renewed effort. This Foundation will be glad to supply¹ further details.

1. Foundation for Alleviation of Sterility, Nesconset, L. I., N. Y.

DEPARTMENTS

PEDIATRICS

G. W. KUTSCHER, JR., M.D., F.A.A.P., *Editor*
Asheville, N. C.

DIETS IN ECZEMA

The recalcitrant case of infantile eczema provides a terrifying experience for the patient and all those in intimate contact with it. The essence of a valuable article¹ on this subject is passed on to readers of this department.

Note how many stand-bys are frequent causes of eczema.

The first step in the management was to eliminate all sources of local irritation and all factors of contact dermatitis. The most common causes were *wool, soap and feathers*; powder and floor wax occasionally. In slightly more than half the cases, only one substance was causing the trouble; in the remainder, 2 to 4.

No skin testing was done—either for contact substances or foods—but an exceedingly careful history was taken in every case.

The babies' faces were kept clean with olive oil, avoiding soap, and the lesions were covered at all times with appropriate ointments. The arms were splinted at the elbow so that the infants might not scratch. Restraints were removed as early as possible.

Key to the treatment was the use of only a few foods known to be innocuous to most allergic patients. The infants were permitted any amount of food on the schedule, but not even the most minute amount of food not on the schedule.

If the patient improves after one or two weeks he is considered sensitive to food allergens; if he does not improve, he is probably sensitive to something else, rarely to a food; more often to an unidentified contact substance.

If the infant objects to acidified milk in the elimination diet, lactic acid may be left out of the formula. Sometimes it is necessary to use a milk substitute, *e. g.*, soybean emulsion. Codliver oil and orange juice are forbidden. If vitamins are thought necessary, they are given in synthetic form, *e. g.* cevitic acid and irradiated ergosterol. Commercially prepared foods are not used.

After the condition has healed or materially improved, other materials are added, one at a time, at 4-day intervals. *It is often discovered that the baby is allergic to those foods against which he shows an aversion.* If the condition flares up after the addition of a certain food, that food

is withheld indefinitely. Milk is usually the first food added; then bread, fruit, vegetables, eggs. Tomatoes and oranges are among the last.

Egg was found to be the most common offender; tomato next; then, in descending order, orange, milk, fish, oatmeal and codliver oil. In some cases, wheat, celery, lettuce, honey, spinach, beans, peas and chocolate were the source of the trouble.

Elimination Diets for Children from Birth to Two Years

FOR CHILD FROM BIRTH TO 8 MONTHS

Evaporated milk	.....oz.
Corn syrup	.....tbsp.
Water (boiled)	.....oz.
Lactic acid	.....tsp.
.....bottles.....of	.....each
to be fed at	.....a. m. ....p. m.

Method of preparation: (1) Blend corn syrup and water. (2) Add lactic acid. Mix well. Gradually add this mixture to the evaporated milk, stirring constantly. Keep in a cool place. The caloric requirements of a child are 50 to the pound of body weight. Evaporated milk has a caloric value of 42 per ounce, undiluted. One ounce of corn syrup is equivalent to 120 calories. The formula for this elimination diet may thus be properly figured and filled in.

FOR CHILD 8 TO 12 MONTHS OF AGE

6 a. m.—Evaporated milk formula.
10 a. m., breakfast—Rice or cornmeal cooked two hours in double boiler; 3 to 4 tablespoons with part of formula poured over it. Puréed prune pulp or ripe mashed banana. Formula—rest to drink.
1:30 to 2 p. m., dinner—Beef broth—may have added rice or rice flour. Strained vegetables—carrots, asparagus, beets. Cornstarch or rice pudding—made with evaporated milk and no egg. Formula.
5:30 to 6 p. m., supper—Same as breakfast.
10 p. m.—Evaporated milk formula.

FOR CHILD 1 TO 2 YEARS OLD

Breakfast—Rice or cornmeal cooked two hours in a double boiler; 3 to 4 tablespoonfuls with diluted evaporated milk poured over it. Puréed prune pulp or apricots, ripe mashed banana and apple sauce. Diluted evaporated milk.

Dinner—Beef broth—scraped beef or chopped liver. Strained vegetables—carrots, asparagus, beets. Cornstarch or rice pudding—made with evaporated milk and no egg. Diluted evaporated milk.

Supper—Same as breakfast.

Bedtime—Diluted evaporated milk if desired.

FOR CHILD OVER 2 YEARS OF AGE

No egg, milk or wheat
Fruit—Prunes, plums, apples, apricots, ripe bananas.
Beverage—Grape, apple or prune juice.
Cereal—Rice, puffed rice, rice krispies.
Meat—Beef, roasted, boiled; steak, liver and beef broth may be used.

Vegetables—Carrots, asparagus, beets and lettuce.

Bread—Ry-Krisp, 100% whole rye bread.

Butter—substitute Crisco for baking.

Flour substitute—Rice flour; rye flour.

Miscellaneous: Maple syrup, Karo, brown and refined sugar, salt, baking soda and gelatin (unflavored). Royal or any baking powder which according to the label on the can does not contain egg.

In a series of 126 cases, 78% were clinically cured in an average of 2.8 months; the remaining 24% were considerably improved in an average of 4.7 months. No case went unimproved.

1 A. R. Birt, in *Canadian Med. Asso. J.*, Dec.

GENERAL PRACTICE

WALTER J. LACKEY, M.D., Editor, Fallston, N. C.

DOING MORE OF OUR OWN WORK WITH BETTER DRUGS LOWERS COST OF TREATMENT

THE recalcitrant case of infantile eczema progresses by leaps and bounds. Human illness can now be treated with more scientific methods and in a more humane way. Too much can hardly be said for what the sulfonamide group has done to speed up recoveries and save lives. The cost of medical attendance has been reduced greatly, due to the rapid recovery from many illness after giving these drugs. In the average case of pneumonia, the family saves at least \$40 in doctor bills alone. Before the Defense Program and all the various other Government expenditures are paid, the families will have to have all the help they can get to meet their financial burdens. If the cost of medical care is not kept at a minimum, that is all the more reason the people may want some kind of socialized medicine; a threat all doctors should be on guard against. This invasion on the medical profession is being kept up throughout our free country in the remotest corners. The minute socialized medicine is put in effect in the United States the quality of medical care will be lowered. We will be treating case No. 405 instead of our good friend, Mr. Jones. The red tape all of us would have to go through would take out the human side of treatment and the field of research would be neglected. The main thing for the medical men to do is to cooperate and each man be more efficient in his field. By doing this, we shall keep the practice of medicine the most highly respected profession on earth, with all due respect to the clergymen.

While I am on this subject of saving the patient of being over-run by medical cost, I want to say again that the modern trend is for many to go to a specialist whether his illness indicates it or not, before he consults his family doctor. If something unusual come up, the specialist has a very definite field and can render a great service for which he should be properly imburshed. By this method the cost of medical care can be greatly reduced and the patient receives much better care. The general practitioner should follow up his patients when they go to the hospital, and if the hospital permits, should treat them there. Treatments such as blood transfusion can be given by the family physician. Blood transfusions have a wider scope of usefulness in the last few years. The methods of giving blood are many and not so

important. Different direct methods are available. The old sodium citrate indirect method is hard to beat. The physician should familiarize himself with the one he prefers. Now it seems that plasma will replace whole blood and make transfusion, as the Dunkard preacher said of his sermon, "so simple that even the women can understand it."

There's no reason why family doctors should refer everything that commands a fee or that has legitimate advertising value.

P. S. A New Year's Resolutions: 1. Let us family doctors overcome our inferiority complexes. 2. Let us all resolve to be more prompt in filling out birth certificates for the coming year, and more accurate in filling out all death certificates.

SUCCESSFUL SUBLINGUAL THERAPY IN ADDISON'S DISEASE

(E. Anderson & W. Haymaker, San Francisco & E. Henderson, Bloomfield, N. J., in *Jl. A. M. A.*, Dec. 21st.)

The ingestion of tablets of desoxycorticosterone acetate is for practical purposes valueless. Two of our patients with Addison's disease who ingested 10 times the dose effective by the subcutaneous route developed symptoms of adrenal cortical insufficiency.

It was found that the preparation, dissolved in propylene glycol, administered by drops under the tongue was as effective in the 6 cases here reported as when given in oil subcutaneously or intramuscularly. Each c.c. of propylene glycol contained 10 mg. of acetate. The dropper used by the patients was such that 1 c. c. of the solution was discharged as 40 drops. The dose was from 8 to 24 drops of the solution, (2 to 6 mg. of the active substance) daily in divided doses.

All 6 patients who have been receiving desoxycorticosterone acetate sublingually for from 6 to 8 weeks are in excellent condition and are carrying on their usual occupations.

THE PREVENTION OF DIABETES

(C. H. Best et al, in *New England Jl Med.*, Oct. 17th.)

Two schools of thought have prevailed as to the steps which should be taken to prevent the development of diabetes in those who by heredity appear most susceptible to the disease: one favoring stimulation of the islet cells of the pancreas by diets rich in carbohydrates; the other testing the pancreas by 1) fasting, 2) feeding of fats and 3) administration of insulin.

Evidence favors the hypothesis that the full-blown development of diabetes is best prevented by resting the pancreas rather than by stimulating it.

RELIEF IN URETERAL COLIC

(J. Carroll, et al, St. Louis, in *Miss. Val. Med. Jl.*, via *Curr. Med. Dig.*, Nov.)

Morphine gr. $\frac{1}{4}$ was found to increase motility of the ureter and atropine neutralized this action; always combine atropine gr. $\frac{1}{15}$, with morphine for renal colic.

The release of ureteral spasm is of great clinical importance, and the severe pain associated with it may be relieved in 3 minutes by the injection of pancreatic tissue extract, 3 c. c. intramuscularly, or padutin, 3 or 4 c. c. Morphine and atropine relieve the pain by blocking the cerebral recognition of it, but do not in themselves release the spasm, hence the former are more desirable.

ATTACKS of transient blindness should be regarded as a warning of vascular disease.—Minton.



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- Cal-C-Tose carries no suggestion of medication. Added to milk, it makes a rich, appetizing, chocolate-flavored drink that tickles the palate of the most finicky child. It is delicious served either as a "hot chocolate" or as a cold, refreshing milkshake.
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- Moreover, *it is economical*. Judged on the basis of its vitamin content solely and disregarding entirely its nutritive value, Cal-C-Tose is one of the most economical of all 5-vitamin products.

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NEWS

FOURTH DISTRICT AND SOUTHSIDE VIRGINIA MEDICAL SOCIETY

The meeting was held at Petersburg, Friday afternoon, December 27, 1940.

SCIENTIFIC SESSION

Sulfathiazole and Allied Types of Chemotherapy in Children, William B. McIlwaine, M. D., *Petersburg*

The Cause and Prevention of Chronic Bronchiectasis, Porter Vinson, M. D., *Richmond*

What Every Physician Should Know About the Spread and Prevention of Tuberculosis,

Ramsay Spillman, M. D., *New York*

New and Interesting Phases of Rheumatic Fever, T. Duckett Jones, M. D., *Boston*

Abdominal Pregnancy With Report of Two Cases, J. B. Jones, M. D., *Petersburg*

The Heart in Pregnancy, William B. Porter, M. D., *Richmond*

Signs and Symptoms of Brain Tumors That Should be Familiar to Every Physician,

C. C. Coleman, M. D., *Richmond*

Signs and Symptoms of Certain Important Surgical Emergencies, Isaac A. Bigger, M. D., *Richmond*

During the afternoon, the wives and friends accompanying the physicians were entertained by the local Woman's Medical Auxiliary headed by Mrs. E. L. McGill, President.

Immediately following the program at the Medical Arts Building, Dr. and Mrs. Wright Clarkson entertained the physicians and their guests at their home, 205 South Sycamore Street.

RICHMOND ACADEMY OF MEDICINE

Dr. Richmond Branch Porter is the new president of the Richmond Academy of Medicine, succeeded Dr. J. Powell Williams. Other officers for the new year are Dr. Beverley R. Tucker, president-elect; Dr. T. Dewey Davis, first vice-president; Dr. John Lynch, recording secretary; Dr. Benjamin W. Rawles Jr., sergeant-at-arms, and Miss Mary Martha Nokely, executive secretary-treasurer. The board of trustees is composed of Dr. Williams, Dr. Porter, Dr. Tucker, Dr. Emmett Terrell, Dr. T. Dewey Davis, Dr. C. L. Outland and Dr. J. L. Tabb.

MARLBORO COUNTY, S. C., MEDICAL SOCIETY

The Twenty-First New Year Meeting and Banquet held at the Country Club, Bennettsville, on January 9th was largely attended and loudly applauded.

At six the annual banquet was served. Afterward excellent post-prandial oratory was supplied by Dr. W. L. Pressley, President; Dr. George M. Truluck, President-Elect; Dr. Julian P. Price, Secretary; and Dr. Joseph I. Waring, Editor of Journal; of the South Carolina Medical Association.

Formal addresses were made as follows: Acute Infectious Mononucleosis—Dr. O. B. Mayer, Columbia. Prolonged Labor Due To Uterine Dystocia—Dr. Brodie C. Nalle, Charlotte. Treatment of Diarrhea and Dehydration—Dr. J. Buren Sidbury, Wilmington.

APPOINTMENTS TO BOWMAN GRAY FACULTY

Dr. Tinsley Harrison, native of Alabama, and graduate of Michigan and Hopkins is the first Professor of Medicine of the new Wake Forest School of Medicine. Dr. Wingate Johnson is Professor of Clinical Medicine.

DR. McCLELLAND MAKES ADDRESS

At the recent meeting of the Association of Seaboard Air Line Railway surgeons, Dr. J. O. McClelland of

Maxton, N. C., chose as the subject of his Presidential Address, "The Country Doctor".

The meeting was held at Savannah, and the papers of that city devoted much space to the meeting especially the President's Address.

AN EVACUATION HOSPITAL UNIT is being organized from the staff of Memorial Hospital, Charlotte. Dr. Paul Sanger is heading the movement.

DR. LONNIE N. LITTLE has been elected health officer of Ireddell County, N. C., in succession to Dr. Ross S. McElwee. Both doctors live at Statesville.

DR. JAMES WATSON, of the Mental Hygiene Bureau of the State Department of Public Welfare, addressed the Guilford County Mental Hygiene Society in Greensboro on January 16th.

DR. W. H. PATTON, JR., of Morganton, has been elected health officer of Burke County.

DR. OSCAR LEE MILLER, president the American Academy of Orthopedic Surgery, presided over the meeting held at New Orleans, January 12th to 16th.

DR. SPENCER BELL, of Brooks Cross Roads, has been elected health officer of Yadkin County.

DR. ALBERT A. KOSSOVE, AND DR. IRENE L. KOSSOVE, announces the opening of offices for the general practice of medicine at 1516 Elizabeth Avenue Charlotte, North Carolina.

DR. WALTER J. REIN, recent associate in ophthalmology of the late Dr. EMORY HILL, announces the continuation of his practice at the same address, 208 Professional Building, Richmond, Va.

MARRIED

Dr. George Benjamin Fleetwood Traylor, of Lumberton, North Carolina, and Miss Leslie Chappell Bradshaw, of Waverly, Virginia, were married on December 21st.

Dr. Joseph Spurgeon Hiatt and Miss Sara Elizabeth Rankin, of Gastonia, were married on January 3rd. Dr. Hiatt is a member of the staff of Duke Hospital.

Dr. Thomas Clarkson Worth, of Raleigh, N. C., and Miss Barbara Donaldson Luther, of Oleans, New York, were married on January 4th. Dr. Worth is stationed at Fort Benning, Georgia, as a lieutenant in the Medical Corps, United States Army.

Miss Mary Adelaide Walton, of Morganton, N. C. and Dr. John Warren Montague, of Roanoke and Richmond, Va., January 4th. Dr. Montague is now a member of the house staff of the Medical College of Virginia Hospital.

Dr. William Alexander Graham and Miss Ermine DeGraffenried Peek, of Durham, were married on January 11th.

Dr. Edward Stewart Orgain, of Richmond, and Miss Ann Foreman Lewis, of Durham, were married on December 28th. Dr. Orgain is a member of the staff of Duke Hospital.

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Dr. Hunter McGuire Sweaney and Miss Frances Leake Foushee, of Durham, were married on December 31st.

Dr. McLean Bacon Leath, Jr., of High Point, and Miss Lillian Boswell Agnew, of Inverness, Virginia, were married on December 31st.

Dr. J. S. Chamblee and Miss Willie Elizabeth Evans, both of Windsor, North Carolina, were married on December 28th. Dr. Chamblee is health officer of Bertie and Chowan Counties.

DEATHS

Dr. Paul Brandon Barringer, physician, educator and publicist of national distinction, died at his home at Charlottesville, Va., January 9th, after an extended illness. He would have been 84 years old in February.

Dr. Barringer was born at Concord, N. C.

In 1877 he was graduated from the medical department of the University of Virginia, in the following year from the University of New York.

Thereafter he passed a year or more of travel and study in Europe, and at the beginning of the 1889-90 session of the University of Virginia was made Professor of Psychology and Materia Medica. For seven years he served as chairman of the faculty.

In 1907, Dr. Barringer was elected president of the Virginia Polytechnic Institute, where he remained for seven years, returning to Charlottesville where he had given his attention largely to work as a publicist, especially in connection with Negro problems, and the agricultural problems of the South.

Dr. Prentiss Dupuy Johnston died at his home at Tazewell, Virginia, on January 3rd, of a heart attack. Dr. Johnston, a cousin of Dr. George Ben Johnston, was born at Goochland Courthouse in 1878 and graduated from the Medical College of Virginia in 1906. One of the survivors is a daughter, Dr. Mary Elizabeth Johnston, who was associated with her father in practice.

Dr. Allan Carruthers Banner, of Greensboro, died suddenly of a heart attack on January 11th, at the age of 45.

Dr. Silas Asa Conduff, 59, prominent physician and civic leader of Mount Airy, N. C. died at Martin Memorial Hospital, January 13th, a heart attack following a recent stroke of paralysis.

Dr. Manney Rice, of Columbia, South Carolina, died at his home on December 25th.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF VIRGINIA

The General Education Board has made a grant of \$168,000.00 for the further development of the St. Philip School of Nursing, (Negro).

This grant will add and furnish approximately seventy-four rooms to the nurses' residence, St. Philip Hall, and will substantially enlarge the library and teaching unit. The estimated cost of this aspect of the new development is \$130,000.00; and provides \$38,000.00, over a six-year period, on a decreasing basis biennially for substantially

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strengthening the teaching program, especially on the clinical side.

The new hospital was dedicated on Founders' Day, December 5th. Participating were Governor James H. Price; Colonel E. W. Clark; Dr. W. L. Bierring; Dr. Walter B. Martin; Dr. H. E. Jordan; M. Haskins Coleman, Jr.; and Dr. Lewis E. Jarrett. President Sanger presided at the exercises which were broadcast over W. R. N. L. Beginning at 2 p. m. the new hospital was opened for inspection to the public and on Tuesday night, December 3rd, a reception and hospital open house were observed at the hospital for the local medical profession and specially invited guests. During Tuesday evening and Thursday afternoon and evening over 15,000 guests were shown through the new building, many from distant points.

Installation ceremonies of Beta Chapter of Virginia, Alpha Omega Alpha, were held at the Commonwealth Club, Wednesday evening, December 3rd. Dr. Walter L. Bierring, National President, and Dr. J. J. Moore, National Secretary, were present, Dr. Bierring conferring the charter on the college and Dr. Moore presenting the certificates and keys to the initiates. Other speakers on the program were Dr. William T. Sanger, President of the college; Dr. Lee E. Sutton, Jr., dean of the school of medicine; Dr. William B. Porter, professor of medicine, and Dr. J. Shelton Horsley. General Hugh S. Cumming and General Merritte D. Ireland were also among the distinguished guests present. Dean H. E. Jordan of the department of medicine, University of Virginia, brought greetings from his institution. Dr. Stuart McGuire was

made honorary and charter member. Faculty initiates were: Drs. Frank L. Apperly, C. C. Coleman, Harvey B. Haag, William B. Porter, Harry Walker, and H. H. Ware, Jr. Students of the senior medical class initiated were: Messrs. Herbert C. Allen, Jr., William E. Daner, George A. Stewart, Jr., and Adney K. Sutphin.

Dr. Porter P. Vinson was recently elected president of the alumni association of the Mayo Foundation.

President W. T. Sanger was made an honorary member of Alpha (Virginia) chapter of Phi Beta Kappa at the College of William and Mary on December 5th.

Dr. Walter E. Vest and Dr. R. J. Wilkinson of the Chesapeake and Ohio Hospital, Huntington, West Virginia, and Dr. J. M. Emmett of the Chesapeake and Ohio Hospital, Clifton Forge, Virginia, were recent visitors.

Dr. Walther Riese reported for work at the college as research associate in psychiatry on January 6th. A grant for Dr. Riese's work here was made by the Rockefeller Foundation of New York.

Dr. R. D. Hughes, Assistant Professor of Biology in the School of Pharmacy, has been called to active duty in the navy. Doctor Hughes' wife will carry on his teaching duties while he is away.

Due to the prevalence of influenza the sixth floor of the new college hospital was opened for patients on January 15th. It is expected the entire hospital will be occupied by February 1st.

Lectures scheduled for the spring months at the college are:

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February 14th Alpha Omega Alpha Lectureship Dr. Fuller Albright, Massachusetts General Hospital, Boston.

March 14 Phi Beta Pi Lectureship Dr. Walter E. Vest, Chesapeake and Ohio Hospital, Huntington, West Virginia.

April 24-25 Stuart McGuire Lectures Dr. Alfred Blalock, Vanderbilt University, Nashville.

The annual spring postgraduate clinics will be held in conjunction with the Stuart McGuire lectures.

Dr. William B. Porter, Professor of Medicine, has been elected president of the Richmond Academy of Medicine.

DUKE

On Nov. 29th-30. 1940, the Tenth Anniversary of the opening of the School of Medicine and Hospital was celebrated and the new Department of Neuropsychiatry was dedicated. One hundred and twenty medical alumni and former members of the house staff were present. Dr. Adolf Meyer, Henry Phipps Professor of Psychiatry of the Johns Hopkins University School of Medicine, addressed the staff, students and alumni on Considerations on Psychiatry or Ergasiatrics as an Essential and Natural Part of All Medical Training and Practice. Special clinics and talks were given by Drs. R. L. Flowers, F. M. Hanes, D. T. Smith, Deryl Hart, Bayard Carter and W. C. Davison.

On Nov. 29th. 1940 the Duke University School of Medicine Alumni Association was organized with the following officers: J. M. Arena, president, R. N. Graves, vice-president, J. L. Callaway, secretary-treasurer, L. D. Baker, corresponding secretary.

On December 11th. 1940, Dr. Lee E. Farr, Director of Research of the Alfred I. duPont Institute of the Namours Foundation held a clinic on the Treatment of Nephritis.

At the beginning of the winter quarter, there were 239 medical students—66 first year, 65 second year, 65 juniors, and 43 seniors. 140 pupil nurses were enrolled.

Dr. Laurence H. Snyder, Professor of Medical Genetics at Ohio State University School of Medicine, is giving a series of weekly lectures on Medical Genetics in January, February, and March.

At the meeting of the Duke Medical Society on January 14th, Dr. Tinsley R. Harrison, newly appointed Professor of Medicine at the Bowman Gray School of Medicine of Wake Forest College, spoke on Hypertension. Dr. Wingate Johnson, Professor of Clinical Medicine at the Bowman Gray School of Medicine of Wake Forest College, discussed the paper.

UNIVERSITY OF VIRGINIA

On January 9th, Dr. Byrd S. Leavell spoke before the Fredericksburg Medical Society on the subject of Anemia.

Dr. Oscar Swineford, Jr., participated in the Third Annual Forum on Allergy in Indianapolis. His subject was Asthma and Heart Disease.

Dr. Robert V. Funsten attended the meetings of the American Academy of Orthopedic Surgery in New Orleans from January 12. to 16th. He presented a paper on Experimental Studies in the Use of the U Clamp For Fixation of the Spinous Processes in Fractures of the Spine.

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BOOKS



STRANGE MALADY: The Story of Allergy, by WARREN T. VAUGHAN, M. D., line drawings by JOHN P. TILLERY. Doubleday, Doran & Co., Inc., New York City. 1941. \$3.00.

The author has written textbooks on this subject for his fellow-doctors. Now he fills the need and the call for a trustworthy book from which those we call the intelligent laity may learn things to counter-act the pernicious influence of the exaggerations and distortions as to allergy appearing in lay publications.

Dr. Warren Vaughan has a broad knowledge of this subject, and he has much of the robust sense, the scientific training and habit, and the literary ability of his distinguished father, Dr. Victor Vaughan; all which means that a book of his will meet the most exacting tests.

THE 1940 YEAR BOOK OF GENERAL SURGERY, edited by EVARTS A. GRAHAM, A. B., M. D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago. \$3.00 postpaid.

Few realize, and most of us did not know, that this series of Year Books have been covering progress in medicine and surgery for 40 years. The current series constitute conspicuous evidences of evolution in its best sense, and the volume on General Surgery covers its field with such discrimination as to merit the highest praise.

THE MEDICAL REPORTS OF JOHN Y. BASSETT, M.D., THE ALABAMA STUDENT, with an introduction by DANIEL C. ELKIN, M. D., JOSEPH B. WHITEHEAD, Professor of Surgery, Emory University. Charles C. Thomas, Springfield, Ill. 1941.

Osler found Bassett's writings in issues of a long-discontinued and never widely-circulated medical publication; and this discovery, in the words of the introduction, "rescued John Y. Bassett from the oblivion to which he seemed otherwise doomed." Here is a happy illustration of the value to a doctor's name and fame of writing for the journals.

Thirty years ago the volume of Osler's discourses published under the title *An Alabama Student* was given this reviewer by a doctor friend. It was a matter for marveling how this doctor's craving for the best made him impose the sternest privations on his family as well as himself, when his patients would have been just as well satisfied and have paid him just as much for the skill he had already.

These Reports cover the topography, climate and diseases of the author's county of Madison,

Alabama; and the climate and diseases of Huntsville and its vicinity in the year 1850. One report is numbered I, the other III, suggesting that an insignificant II may have been forgotten, as in the Napoleonic succession.

An appendix, which is a letter from a Dr. Mastin to Dr. Osler, sheds a new and interesting light on Bassett's life, and gives his work new meaning.

This booklet of Reports affords delightful, instructive and inspiring reading. In all probability Osler's style was improved by his running across those forgotten sentences of pungently expressed observations.

THE MERCK MANUAL OF THERAPEUTICS AND MATERIA MEDICA. Seventh edition. *Merck and Company, Inc.*, Rahway, N. J. 1940.

The sixth edition was published in 1934. The present edition continues the plan expressed at that time: "when the best remedy is wanted . . . it is difficult to recall the whole array . . . and pick the best . . . The Merck Manual is intended to supply just the needed reminder." And the developments during the interval have supplied many valuable additions to our therapeutic armamentarium.

MODERN DRUG ENCYCLOPEDIA AND THERAPEUTIC GUIDE: 11,114 modern nonpharmacopoeial, ethical medicinal preparations in 15,629 forms,—3,421 drugs and chemicals, 663 biologicals, 691 endocrines, 2,270 ampoule medicaments, 3,190 individual and group allergens and 879 miscellaneous products, by JACOB GUTMAN, M. D., Ph.D., F. A. C. P., Director, Brooklyn Diagnostic Institute; Formerly Professor of Materia Medica, College of Dentistry, University of the State of New Jersey; Professor of Clinical Chemistry, Jersey City College of Pharmacy; Instructor of Medicine, New York Post-Graduate Medical School and Hospital. 2nd. edition. *New Modern Drugs*. New York. 1941. \$7.00.

This, the second, edition gives much space to endocrine products, vitamin therapy and chemotherapy. Preparations advertised to the laity are not carried, but such helpful, ethical drugs available throughout the United States. A glossary is provided, wisely, to make clear what is meant by certain terms not to be found in even good dictionaries.

There are 700 pages of information on popular proprietary drugs; 80 on endocrine preparations (30 of these on pluriglandular products); 170 on hypodermic medicaments; 100 on biologicals; 50 on allergens. Then comes a distributors' and manufacturers' index of 10 pages, then a therapeutic guide and index of 160 pages presenting all the drugs and preparations described in previous chapters from the standpoint of composition, effects and application in treatment. Last there is a good drug and general index of 180 pink pages.

The work is truly encyclopedic. For instance, for cystitis 73 remedies are listed; for diarrhea, 62.

THE 1940 YEAR BOOK OF PEDIATRICS: edited by ISSAC A. ABT, D. Sc., M. D., Professor of Pediatrics, Northwestern University Medical School; with the collaboration of ARTHUR F. ABT, B. S., M. D., Assistant Professor of Pediatrics, Northwestern University Medical School. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago. \$2.50 postpaid.

The book for this year carries some photographs. That of Dr. Abt, Sr., looks like Dr. J. H. McIntosh; that of Dr. John Ridlon like Dr. Osler; that of Dr. G. P. Head like Dr. M. H. Todd; while Dr. E. W. Ryerson resembles Dr. C. C. Orr and Dr. Cloyd J. Head reminds of this year's Tri-State president, Dr. C. J. Andrews.

The treatment of pneumonia is reviewed from a long way back all the up to sera, sulfonamides, oxygen and transfusions. Much attention is devoted to disease and nutrition in the first year. The attitude toward the use of vitamins is soundly conservative. Repeated Schick tests during childhood are advised to detect possible lapses of immunity. A mother who acquires measles in the last days of pregnancy or during the time of delivery may transmit the disease to her baby. Progress is noted all along the line in the management of infectious diseases.

Pectin-agar mixtures have been found useful by G. W. Kutscher and Alfred Blumberg, Asheville. Other doctors from this section whose articles are reviewed are: Wyndham R. Blanton, Richmond; N. W. Beach, Charleston; Angus McBryde, Durham; R. W. McKay, Charlotte.

An unusually good covering of an unusually good year for pediatrics.

THE EUGENICS OF PRESIDENT ABRAHAM LINCOLN: His German-Scotch Ancestry Irrefutably Established from Recently Discovered Documents, by JAMES CASWELL COGGINS, A. M., S. T. D., Ph. D., LL. D., *Goodwill Press*, Elizabethton, Tenn. 1940. \$2.00.

All authorities consulted agree that Lincoln's mother, Nancy Hanks, was a "woods-colt."

Building on the foundation laid by J. H. Cathey, Professor Coggins has provided this generation with a cogent, convincing case for North Carolina as the birthplace and Abraham Enloe as the father of Abraham Lincoln. A number of unfortunate errors mar the work; but they in no way weaken the case made out. Everything considered, it is as laughable that the late Senator Beveridge should appear as "Beverage," as that it should be stated of A. Lincoln that "he became a loaf in New Salem;" and that pompous ass, Edward Everett Hale, would not rest easy in his grave could he see himself appearing as "Evert."

Southern Railway's Six Streamlined Diesel-operated Coach Trains

Six such trains are to be put in service early in 1941 between New York and New Orleans, *via* Atlanta, Birmingham and Meridian; and between Washington and Memphis, *via* Knoxville and Chattanooga.

The New York-New Orleans all-coach trains will be operated in conjunction with the Pennsylvania Railroad between New York and Washington and the Memphis trains in cooperation with the Norfolk & Western between Lynchburg and Bristol, Va.

Each of the six trains will consist of an observation-lounge-tavern car, 48-seat dining car, baggage-dormitory chair car, chair car coaches and Diesel-powered locomotive, all of light-weight construction with ultramodern streamline effects, with a hostess assigned to each train. The chair cars have soft, upholstered reclining seats, individual lights that may be dimmed at night and unusually broad windows. The trains will be air-conditioned throughout and all seats will be reserved at no additional cost over the regular coach fares.

The New York-New Orleans trains will be an entirely new daily service, operating exclusively over the lines of Southern Railway between Washington and New Orleans, while the Memphis trains will replace existing trains Nos. 25 and 26, the Memphis Special, and will handle sleeping cars between Knoxville, Chattanooga and Memphis, in addition to the coach equipment.

Tentative schedules between New York and New Orleans are announced as follows:

<i>Southbound:</i>			<i>Northbound:</i>	
4:30 PM	Lv. New York	Ar.	12:50 PM	
8:30 PM	Ar. Washington	Lv.	9:00 AM	
8:45 PM	Lv. Washington	Ar.	8:40 AM	
8:57 PM	Lv. Alexandria	Lv.	8:28 AM	
11:02 PM	Lv. Charlottesville	Lv.	6:23 AM	
12:17 AM	Lv. Lynchburg	Lv.	5:08 AM	
1:32 AM	Lv. Danville	Lv.	3:53 AM	
2:32 AM	Lv. Greensboro	Lv.	2:53 AM	
3:32 AM	Ar. Salisbury	Lv.	1:53 AM	
4:28 AM	Lv. Charlotte	Lv.	12:57 AM	
5:59 AM	Lv. Spartanburg	Lv.	11:26 PM	
6:40 AM	Lv. Greenville	Lv.	10:45 PM	
9:45 AM ET	Ar. Atlanta	Lv. ET	7:40 PM	
11:15 AM CT	Lv. Anniston	Lv. CT	4:10 PM	
12:35 PM	Ar. Birmingham	Lv.	2:50 PM	
3:30 PM	Ar. Meridian	Lv.	12:15 PM	
7:45 PM	Ar. New Orleans	Lv.	8:00 AM	

Tentative schedules of the streamlined Memphis Special will be:

<i>Southbound:</i>			<i>Northbound:</i>	
9:00 AM	Lv. Washington	Ar.	9:45 PM	
9:12 AM	Lv. Alexandria	Lv.	9:30 PM	
	Lv. Charlottesville	Lv.	7:30 PM	
12:45 PM	Ar. Lynchburg	Lv.	5:45 PM	
1:50 PM	Lv. Roanoke	Lv.	4:40 PM	
2:55 PM	Lv. Radford	Lv.	3:15 PM	
5:45 PM ET	Ar. Bristol	Lv. ET	12:40 PM	
7:00 PM CT	Lv. Morristown	Lv. CT	9:20 AM	
8:05 PM	Ar. Knoxville	Lv.	8:20 AM	
9:30 PM	Lv. Athens	Lv.	6:45 AM	
10:55 PM	Ar. Chattanooga	Lv.	5:25 AM	
1:15 AM	Lv. Huntsville	Lv.	2:50 AM	
1:45 AM	Lv. Decatur	Lv.	2:15 AM	
3:05 AM	Lv. Sheffield	Lv.	1:05 AM	
4:30 AM	Lv. Corinth	Lv.	11:45 PM	
6:55 AM	Ar. Memphis	Lv.	9:25 PM	

These schedules as contemplated will make all important connections at New York, Washington, Atlanta, Birmingham, New Orleans, Chattanooga and Memphis, in both directions, and will provide substantially faster train service than the existing schedules.

There are pictures bearing the titles:

Nancy Hank's Log Cabin in North Carolina; Wesley Enloe, half-brother of Lincoln; Nancy Hollifield, aged 107 years; Scroop Enloe, half-brother of Lincoln; Abraham Lincoln's Mother in the Ox-wagon; Lincoln's Birthplace; Trees Used as Brakes; A Paul Revere Ride; Grave of Nancy Hanks; Tom Whipped Both Nancy and Little Abe; Little Abe's Father Fights Tom Lincoln; Camping at Night in the Wilderness; Meeting With Indians; Taking Little Abe to Kentucky.

THE CELLULAR ORIGIN AND GROWTH OF MENTALITY, OR THE SOUL: (Researches for the University of Paris), by JAMES CASWELL COGGINS, A. M., S. T. D., Ph. D., LL. D., for many years principal of schools in North Carolina; pastor First Christian Church, Ottawa, Kansas, Decatur, Ill., Augusta, Ga.; founder and first president of Atlantic Christian College, Wilson, N. C. *The Biltmore Press*, Asheville, N. C. \$2.00.

This reviewer finds difficulty in following the reasoning of the author; and in many instances in which the meaning seems clear he is entirely unable to agree with the author's conclusions. Some of the statements made as statements of general fact are not true in the reviewer's experience. For examples: the statements are made (1) that it is not the brain that does the thinking; and (2) that science believes in nothing that it cannot see under a microscope. The author appears to labor under the delusion that his own abuse brings the abusee under the condemnation of Jehovah. The reviewer dissents.

NOT TOO OLD FOR SURGERY

(C. R. Robins, Richmond, in *Bul. Stuart Circle Hosp.*, Dec.)

From January 1st, 1939, to October 1st, 1940, a period of 21 months, I performed 22 operations on 21 persons whose ages ranged from 60 to 80 years. There were no operative deaths. The patient with sarcoma of the groin died some months later from an extension of the disease. All these patients were very grateful and they took pride in their operations. They were relieved of conditions that caused them apprehension, discomfort, or pain, or actually threatened their lives; consequently they seemed to take a new lease on life and a new joy in living. What could cause more despair than to be told that one is too old for operation and that his only relief is in death?

PHYSICIAN'S EQUIPMENT FOR SALE

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G. E. Diathermy Outfit	329.00	50.00
Office Desk and Chair Extra Good		50.00
Two Examining Tables		20.00
Two Lamps		10.00
Microscope (E. Leitz, Wetzlar)		75.00
Otoscope	35.00 or 40.00	15.00
Filling Cabinet		15.00
Instrument Cabinet		15.00

Dr. James Alexander's death causes the offer for sale of the following items; all in No. 1 condition:

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JOHN BROWNE AND HIS TREATISE ON THE MUSCLES

(K. F. Russell, Melbourne, in *Aust. & New Zealand J. of Surg.* Oct.)

John Browne held the post of Surgeon in Ordinary to both Charles II and William III. He was the author of a number of books on surgery and one on anatomy.

He was born in 1642 at Norwich, the birthplace of the Sir Thomas Browne who wrote *Religio Medici*. They were not related.

His medical career started at Saint Thomas's. After a brief service as surgeon in the Navy he settled at Norwich. Apparently coming under the notice of the King he came to London in 1677 and was appointed Surgeon in Ordinary. A vacancy occurred on the surgical staff of Saint Thomas's, and, armed with a letter of recommendation from His Majesty, Browne applied for the position. The governors wished to fill the vacancy with an Edward Rice, who had given good service to the hospital during the great plague, but because of the King's letter they could not refuse Browne and he was elected on June 21st, 1683.

The governor's turn came in 1691 when all the surgeons, including Browne, were asked to resign and others were appointed in their place. Browne appealed to the Lords Commissioners of the Great Seal, who called on the governors for an explanation, and when this was forthcoming, they gave a decision against Browne.

After the death of Charles II, Browne was appointed Surgeon in Ordinary to William III, which position he held until his death in 1700.

His treatise on the muscles first appeared in 1681. It is interesting to note that the 1687 edition was the first book ever to appear in which the names were printed on the muscles.

DIAGNOSIS OF TUMORS OF THE BREAST

(E. T. Bell, Minneapolis, in *Minn. Med.*, Dec.)

The clinical features are shown in the following outlines:

I. SINGLE TUMOR

1. Adherent. The great majority are malignant, but in rare instances an adherent growth proves to be fat necrosis or mastitis. Palpable axillary lymphnodes strengthen the diagnosis of malignant tumor. Unless the diagnosis is obvious one should remove the lump and examine it before proceeding with radical operation.

2. Non-adherent. In young women the majority are benign, in older women most are malignant. Deeply placed scirrhous carcinomas are not adherent and medullary carcinomas do not adhere. Tumors unusually movable are apt to be fibroadenomas. Cystic disease frequently appears as a single non-adherent tumor. In this group is imperative that the tumor be removed and examined before the operation is decided upon. An aspiration biopsy may be made if one is reasonably sure the growth is a cyst.

II. MULTIPLE TUMORS

Multiple tumors in one or both breasts are malignant when adherent and nearly always benign when non-adherent. In rare instances a medullary or gelatinous carcinoma appears as non-adherent masses.

Non-adherent multiple tumors usually represent cystic disease, but rarely they may be fibro-adenomas. It is usually satisfactory to remove the most conspicuous mass for microscopic examination. If cystic disease is found no further operation is indicated.

III. SINGLE OR MULTIPLE ILL-DEFINED

NON-ADHERENT MASSES

These usually represent uneven involution of the breast.

After repeated pregnancies some lobules do not regress as much as others. Varying proportions of fibrous tissue in different parts may also give the impression of tumors. A clinical diagnosis can usually be made and operation is seldom indicated.

IV. ACUTE CARCINOMA

This produces diffuse induration of the breast with adhesion to the skin, redness, tenderness and local heat and the patient may have a low fever. Incurable and best palliation is obtained by radiation.

V. MASTITIS

1. Mastitis of Puberty. In boys or girls near puberty there may develop a tender indurated area, small and circular, the nipple is in its center, self-limited.

2. Exudative Mastitis. Inflammatory lesions, usually during lactation or pregnancy, exhibit the features of inflammation and are treated accordingly.

3. Chronic Fibrous Mastitis. Masses of fibrous tissue sometimes develop in the breast, patchy distribution or the entire breast may be converted into a firm mass.

VI. DISCHARGE FROM THE NIPPLE

1. With a Palpable Tumor. Whenever a palpable tumor is found it should be removed and examined, it may be papilloma or a carcinoma.

2. Without a Palpable Tumor. Discharge may be bloody or serous, a small duct papilloma more often a cyst communicating with a large duct.

In the diagnosis of cystic disease of the breast it is important to distinguish the adenomatous type from carcinoma. Under low magnification benign lesions always show a definite lobulation. Under high magnification these adenomatous areas appear malignant. Adenocystic disease is neither a cancer nor a precancerous lesion.

CHUCKLES

Smart Little Waitress to Customer: "I've got deviled kidneys, calves' brains, pigs' feet, chicken livers, and..."
 "Forget it sister," growled the cantankerous diner. "I've a headache, eczema, fallen arches, corns, bunions, three warts and an empty stomach. Tell your troubles to someone else, and bring me some ham and eggs."

Head Clerk: "I am very sorry to hear of your partner's death. Would you like me to take his place?"

Senior Partner: "Very much, if you can get the undertaker to arrange it."

Little Mary Jane awoke about 3 o'clock one morning. She asked her mother to tell her a story. Her mother said, "If you wait a little longer your father will be home and tell us both a story."

"Your vegetables cost more than they used to," complained the buyer.

"Yes," replied the farmer, "when a farmer is supposed to know the botanical name of what he's raisin', and the zoological name of the insect that eats it, and the chemical name of what will kill it, somebody's got to pay."

He: "Billy the Kid, the famous Arizona desperado, killed nineteen men before he was twenty-one."

She: "What kind of a car did he drive?"

A lady of 30 entered the office in an agitated state. The evening before she and her fiance had patronized a palmist, who had told her that the lines of her hand indicated she would have but one child. This seemed to displease her young man, although he said nothing.

"Doctor," pleaded the woman, "please change the lines on my palm so I can have more than one child!"

A public-minded woman had been contributing her time as a supervisor in a WPA sewing room. One night she looked over the weary women, many of whom showed they would soon need an obstetrician, and delivered herself of this immortal peroration:

"Ladies, you have been neglected. No one has had the courage to talk to you about birth control and you need it! I am going to help you. I am not afraid. Now, this is what you do. When it is time to go to bed, do not be afraid. Let your husband get in. Then you take a blanket, wrap it securely around yourself, and sleep on the floor!"

Her husband has recently moved his business to another town.

An enema was ordered for a gentleman patient and a nurse went in to prepare the patient. She explained, "I'm going to give you an enema."

Patient: "I don't want any enema."

Nurse: "But it's the doctor's order."

Patient: "Well, you can't make me take it. I won't open my mouth."

Called to attend a young divinity student; during the examination the physician asked to "see the unruly member." The student looked at the doctor curiously and began to remove the covers from the lower portion of his body.

"No, no," said the doctor, "let me see your tongue."

A few weeks later the physician was called to see the young student's wife and, during the examination, asked the same question. She promptly responded by extending her tongue and drew it back to say: "You see, doctor, I know my theology."

On completing a lecture on obstetrics to student nurses, a doctor gave an examination. This was one of the questions: "Give some positive signs of pregnancy."

One of the answers read: "One of the signs of pregnancy is a far-away look in her eye."

A staff physician on his rounds was told by a patient that her right ear was aching. He wrote an order directing that a hot water bag be placed against the ear and continued on his way. When he returned later that day, he was amazed to find the patient sitting on a hot water bag. Calling in a nurse, he requested an explanation.

"But that's what you ordered," was the aggrieved answer.

Unbelievably, the doctor picked up the chart to check the order and read, "Hot water bag to patient's r. ear."

A young sailor cast away on a desert island, after nine years, spied a figure on a neighboring island. Braving the sharks, he swam there to find a sweet young woman. Approaching her, he said:

"How long have you been here?"

"Why, I've been here six years," she said.

"Six years. Why, I've been on my island for nine long years."

"Why, you poor man, all alone for nine years. I'm going to give you something you've been wanting for a long time."

"Lady, you don't mean to tell me you've got beer on ice?"

—Milwaukee Med. JI.

"Oh, your husband has a new suit, hasn't he?"

"No."

"But he looks different, somehow."

"He's a new husband."

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JAMES M. NORTHINGTON, M. D., Editor

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CHARLOTTE, N. C. FEBRUARY, 1941

No. 2

Acidosis—Physiological Basis and Treatment*

FRANK B. MARSH, M. D., Salisbury, North Carolina

BECAUSE of its far-reaching effects and the multiplicity of its associations, Acidosis has received for a long time considerable thought and attention. With the better understanding of the principles of normal and disturbed fluid balance, the subject has commanded even more consideration.

Acidosis is usually the result of either one of two different types of disturbed body metabolism. It may result from an imbalance of electrolytes in the body fluids such as is seen in the excessive loss of the sodium ion under certain disease conditions. It may result, on the other hand, from the production of an excessive amount of ketones, as in the disturbed metabolism of an uncontrolled diabetes. While either of these disturbances may result in the development of acidosis, it is indeed seldom, if ever, that the acidosis is produced solely by the depleted sodium ion store or only by the presence in the body of an excessive quantity of ketone substances. Practically always there is a combination of these two factors operating in the production of the acidotic state, as it is met with in practise. For example, in the acidosis occurring in children in whom the disturbance develops as a result of the depletion of the sodium ion through diarrhea, the nausea and vomiting bring about the ejection and rejection of food and fluid (including carbohydrate) to such an extent that the combustion of the stored fats is no longer complete. The result is the accumulation of an excessive quantity of the ketone bodies.

In operative cases of which excessive bile drainage, diarrhea, profuse sweating, or nausea and vomiting is a feature, exactly the same condition may result. If dextrose in distilled water is administered without taking into consideration the electrolyte loss, the production of an excess of ketone substances may be prevented even in the presence of acidosis due to electrolyte imbalance.

In the severe acidosis of diabetes there is practically always depletion of the sodium ion as well as the presence of the large amount of the ketone substances. The recognition of this fact is important if the proper treatment of such a patient is to be carried out.

There are rarer conditions, the presence of which predisposes to or results in acidosis. They are so seldom encountered, however, that they do not warrant detailed consideration in this type of discussion. One variety of this group of conditions is illustrated by the two cases reported in 1938 by Dr. Alexis Hartman. The acidosis in those instances was the result of the inability of the renal tubules to reabsorb the bicarbonate in the process of urine formation. The loss of base in that manner predisposed to the frequent occurrence of acidosis and required an almost constant ingestion of the sodium ion to prevent the development of the acidotic state.

As a preliminary to the discussion of the subject of acidosis, it may be worth while to review a few of the basic principles governing the fluid balance of the body.

*Read before the Rowan County (N. C.) Medical Society, Salisbury, Dec. 12th, 1940.

It is well to remember that about 70 per cent of the body weight is made up of water. Approximately 25 to 35 per cent of this amount constitutes the extracellular fluid, while the balance makes up the intracellular fluid. The extracellular fluid includes the plasma portion of the blood, the lymph, and the cerebrospinal and interstitial fluids. The intracellular portion is the fluid medium within the cell bodies. These two fluids lie, so to speak, in different compartments which are separated by a semipermeable membrane. The extra- and intracellular fluids have the common functions of helping to maintain a normal osmotic pressure in the body, conveying nutritive elements and internal secretions to and from the tissue cells of various parts of the organism, carrying waste products and poisons from the cells to the eliminative organs and participating in the regulation of the body temperature.

These fluids, however, do differ in one important respect. This difference has to do with the electrolyte content and the concentration of protein in the two fluids. The intracellular fluid contains principally potassium, magnesium, phosphate and protein, while the extracellular portion contains very largely bicarbonate, chloride and sodium. It is by means of osmotic pressure that the interchange of fluids and the substances in solution is brought about between the cells and the intercellular spaces. Under normal circumstances this pressure is held in a state of equilibrium to a very great extent by the equal concentration of the monovalent ions, potassium within and sodium outside the cell bodies.

The additional factor playing its part in the maintenance of the normal osmotic pressure within the body is the proper concentration of the other crystalloids and the proteins in solution.

For the purpose of discussion one can illustrate the changes occurring in the body fluids in the various types of disturbed fluid balance by the accompanying diagrams. There is represented in these figures a vessel divided into two compartments by a semipermeable membrane. The fluids in the two sections of the vessel are thus separated by that membrane which permits the forces of osmosis to operate. The chamber A may be allowed to represent the intracellular and the chamber B to represent the extracellular spaces, while the fluids in these compartments represent the intracellular and extracellular fluids, respectively.

As one sees in Diagram 1, there are in solution on one side of the semipermeable membrane potassium, magnesium, phosphate and protein, while on the other side of the membrane are bicarbonate, chloride and sodium. With the equal concentra-

tion of the potassium and sodium the normal water balance is established. If, however, the amount of sodium is reduced by a given amount of the normal store, two very definite things occur. First, the amount of water in the chamber marked extracellular fluid is decreased, and second, the amount of water in the chamber marked intracellular fluid is increased (Diagram 2). This is true because of the fact that the potassium ion, being practically incapable of permeating the cell wall, is held within the cell body, and therefore does not vary in concentration to any appreciable degree. The sodium ion in the extracellular fluid, however, is subject to great variation in concentration under several different circumstances.

For practical purposes and particularly for the aim of this discussion, after assuming the existence of a normal serum protein, we may postulate that it is by reason of a normal sodium ion concentration in the extracellular fluid that the state of normal hydration is maintained. We may say, too, that when the sodium chloride in the body is low, a state of dehydration is present, and when there is an excess of sodium chloride in the body the converse of dehydration, edema, exists. (Diagram 3.) We must now conclude also, that in order to overcome or remedy dehydration it is just as necessary to administer sodium chloride as it is water, otherwise the water passes out through the kidneys, none remaining in the blood vessels, the interstices, or the lymph spaces to help restore the normal fluid balance. It becomes evident, too, that in the presence of edema resulting from salt retention, such as in nephritis, large quantities of water are necessary; but salt should not be administered lest the edema be increased thereby.

It must be stated at this juncture that by no means do the sodium and chloride ions bear a fixed relation as to the extent of loss or the constancy of the amount in concentration under certain pathological circumstances. (Diagram 4).

Deficiency of sodium may result, of course, from a long-continued inadequate ingestion of the sodium salts; however, the most frequent cause for this disturbance in hydration results from prolonged and copious drainage from the body of the various salt-containing fluids. When one considers the composition of the gastric and intestinal secretions, the bile, the urine and the sweat, he can clearly see how great loss of any of these fluids might result in electrolyte depletion. These excretions and secretions may be looked upon as modified extracellular fluids, the first three of which are normally reabsorbed, the loss of the electrolyte thereby being prevented.

In the event of a considerable loss of any of

these fluids, there is a significant diminution in the store of the necessary and effectual chloride and sodium ions, the loss of which will result in dehydration unless these elements are replaced in the equal or greater quantity.

In this connection it should be recalled that, depending upon the location in the alimentary tract from which the fluid loss occurs, will be determined the particular electrolyte which is depleted thereby. For example: prolonged emesis from pyloric obstruction or a considerable loss of hydrochloric acid by gastric intubation frequently results in an alkalosis as a result of the relatively larger amount of chlorides in the gastric juice. On the contrary, obstructive lesions in the upper part of the small bowel (duodenal or jejunal) will result in the loss of the acid and base elements in approximately equal quantities. In the fluid loss of diarrhea or in the copious drainage from an ileostomy, the base depletion is greater and acidosis follows. In the surgical drainage of the gall bladder or bile ducts, the alkali loss predominates with the predisposition toward an acidosis. In heat prostration, the result of excessive sweating over long periods of time, there is a significant loss of water as well as of sodium and chlorine ions.

It becomes evident then that either acidosis or alkalosis may result from the imbalance of electrolytes, the determining factor being the predominant loss of sodium in the former and the more marked loss of the chlorine ion in the latter. We must recognize the fact that the acidosis originating primarily as a result of the sodium ion loss is merely one phase of dehydration. (Diagram 5).

The organic type of acidosis arises from an entirely different type of disorder. Underlying this type is the fact that "fats burn in the fire of carbohydrate combustion." In any condition in which the oxidation of the carbohydrates is considerably limited or slowed, as in carbohydrate starvation or in uncontrolled diabetes of the severe type, the fats are incompletely burned and organic acid bodies are produced. These substances are the ketones, the chief ones being acetone, diacetic acid and beta-hydroxybutyric acid. In the attempt of the protective forces of the body to counteract this disordered state much of the base may be lost and the buffer reserve decreased to a sufficient degree to cause serious consequences.

The normal pH of the blood (about 7.4) is protected by three agencies: (1) The buffer systems of the body; (2) the elimination of CO_2 by the lungs; and (3) the excretion of the fixed acids by way of the kidneys and the bowels. The base bicarbonate, the alkaline phosphate and the alkaline proteinate perform the buffer or tampon action

and neutralize the several acid substances formed in or introduced into the body, thereby maintaining the normal pH of the body in health. It is the quantity of the sodium ion existing in the extracellular fluids which determines very largely the amount of bicarbonate present and the total alkali reserve. In any instance in which the quantity of disassociated sodium ion is considerably reduced the chloride shift occurs, releasing more of the sodium element for the formation of additional base bicarbonate. The carbonic acid concentration in the blood, on the other hand, may be raised or lowered as the situation demands, thereby taking care, up to a certain point, of any excess of base obtained in the body fluids.

TREATMENT

In the treatment of the disturbance of electrolyte balance now under discussion, it usually suffices to administer large quantities of sodium chloride in the form of normal saline solution. The normal kidney has no difficulty eliminating large excesses of either the sodium or the chloride ion, provided sufficient water be administered therewith. Experimental studies have proven that healthy kidneys can eliminate as much as twelve to fifteen times the average normal body requirement of sodium chloride when accompanied by copious quantities of water. However, in those cases in which there has been a pronounced loss of the sodium element, as indicated by a considerable decrease in the plasma CO_2 combining power, it is often advisable to replace this deficiency by administering either a sterile solution of sodium bicarbonate or a preparation of sodium r-lactate intravenously. By basing one's calculation on the plasma CO_2 combining power and the weight of the patient, the amount of the sodium bicarbonate or sodium r-lactate necessary to replace the sodium ion deficiency may be easily determined.

Hartmann advocates the use of sodium r-lactate usually in the 1/6 molar strength in the treatment of all types of acidosis, as well as in its prevention under certain circumstances. The formula suggested by Hartmann for determining the quantity of normal sodium r-lactate required for a given individual is:

$$mM = (60 - \text{CO}_2) 0.7 W$$

2.24

In this equation mM represents millimolars, CO_2 represents the plasma CO_2 reading, and W the weight of the patient in kilograms.

It must be remembered that in all such cases large quantities of fluid in some instances as much as 5000 c.c. in the twenty-four hours, are required to restore the fluid balance.

The quantity of sodium chloride required in any given case of dehydration may be estimated by the formula of Collar and Maddock:

$$(560 - PC) \times .5gm \times \text{Kilo } BW = \text{Gms. NaCl.}$$

100

In this equation *PC* represents the plasma chloride determination and *BW* the body weight of the patient at the time of the examination.

All the fluid required for the given individual for the day, except that containing the estimated amount of NaCl needed, should be administered in the form of either a five or ten per cent solution of glucose in distilled water, intravenously. Inasmuch as this type of acidosis is a part and parcel of dehydration, this same rule holds good for the treatment of the dehydrated patient under ordinary circumstances.

In the treatment of diabetic acidosis, one strives to obtain several different results. As suggested by Dr. Hartmann, they may be considered as:

1. Relief of the disturbed body pH and HCO_3 .
2. Relief of anhydremia and dehydration.
3. Restoration of the normal electrolytes.
4. Abolition of the ketosis.
5. The restoration of the glycogen reserve.
6. The reduction of hyperglycemia and of glycosuria.

It is important that at least some of these aims be accomplished rather rapidly, and preferably as rapidly as possible. This statement applies principally to the relief of the disturbed body pH which embraces the relief of the dehydration, the restoration of the normal electrolytes and the restoration of a normal plasma CO_2 combining power. With these objects attained, the ketosis, the depletion of the glycogen reserve, the hyperglycemia and the glycosuria becomes less significant, in that the patient's condition has been made much less precarious by that accomplishment.

As we analyze the various objects of the treatment as outlined, we see that the first three are attained as a result of the administration of a sufficient quantity of fluid (water) and the sodium ion in an available form. The fourth is accomplished by the administration of insulin with or without glucose, and plenty of water with which the ketones may be washed from the body.

The fifth and sixth aims can be accomplished only by the administration of a sufficient quantity of insulin to convert the dextrose into glycogen and, later, of a sufficient quantity of glucose to permit of the production of enough glycogen to meet the body's requirements. With the proper regulation of the dose of insulin and the dietary requirements of the patient, the hyperglycemia

and the glycosuria can be satisfactorily controlled.

In order to simplify and abbreviate the matter of treatment as much as possible and at the same time present a type of routine procedure which has been proved to be quite effective, I shall outline for you a method of treatment which was suggested recently by Dr. Alexis Hartmann of St. Louis.

After the history is taken and a careful physical examination is done to make certain the diagnosis of diabetic acidosis, the patients are given: First, two units of plain insulin for each kilogram of body weight; second, 30 c.c. of 1/6 molar sodium r-lactate per kilo intravenously; third, 50 to 100 c.c. per kilo of fortified lactate Ringer's solution subcutaneously.

The two units of insulin, according to the observation made by Dr. Hartmann, are sufficient for complete metabolism of the sodium r-lactate administered and to reduce the blood sugar by 300 mgm. per 100 c.c. of blood. The fortified lactate Ringer's solution will produce 8 grams of NaHCO_3 per liter, and the total amount of the sodium r-lactate should increase the plasma CO_2 content by 30 to 40 volumes per cent.

After six hours the second dose of insulin may be necessary. The dose is to be governed by the blood sugar level or urinary sugar estimation. The dose is usually $\frac{1}{2}$ unit per kilogram of body weight.

At this point, in exceptional cases of acidosis of the greatest severity, 30 c.c. more of the isotonic sodium r-lactate solution may be administered.

As the blood sugar level approaches normal, if the general condition warrants it, the patient is started on easily digested food, the dose of insulin being estimated from the previous requirements and the condition of the patient and generally being about one unit of insulin for each two grams of available dextrose.

Symptoms of shock indicate the immediate administration of blood plasma intravenously in sufficient quantities to be effective. This measure may prove life-saving in the more desperate cases.

It has been shown that by the use of the sodium r-lactate and insulin, the plasma CO_2 combining power in severe acidosis can be raised as much as 15 to 16 volumes per cent in two hours, while with saline and insulin it often requires many hours more to obtain the same amount of rise. Such a significant difference in effectiveness can leave no question as to the type of solution indicated by the condition under discussion.

In most instances the change in the patient's condition is very striking under the suggested treatment. However, it must be remembered that if the patient is not given enough sodium chloride

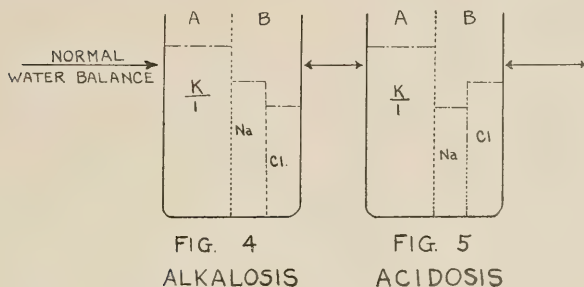
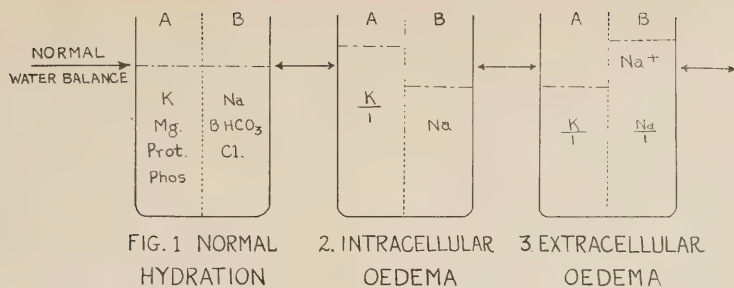


Figure 1 The equal concentration of the Na and K ions results in the state of normal hydration.

Figure 2—The loss of sodium ion results in an intracellular edema and an extracellular dehydration. This may result from a localization of sodium in a pathological lesion, i.e. pneumonia or an extensive burn, or as a consequence of the unreplaced loss of the electrolyte from the body.

Figure 3—The presence of an excess of the Na ion in the body brings about the retention of an abnormal amount of water in the extracellular spaces, instituting a state of general edema.

Figure 4—In the development of dehydration, the loss of a relatively larger quantity of the Na ion gives rise to a relatively larger amount of the Cl ion in the extracellular fluid. The result is a state of acidosis.

Figure 5—The loss of relatively larger amount of the Cl ion results in the development of a state of alkalosis, being the counterpart of the condition illustrated in Figure 4.

there is likely to be retained in the blood an excess of HCO₃. Should the degree of dehydration in a given patient not be considerable, the sodium r-lactate should be given in more concentrated form; i.e., in one-third to one-half molar strength, and the total quantity of fluid administered reduced proportionately. On the other hand, in conditions of great dehydration sodium r-lactate in a hypertonic solution is prone to cause high fever, the result of rapid oxidation of the sodium d-lactate. In the presence of dehydration, it should be given as an isotonic solution, which is the 1/6 molar strength.

SUMMARY

I. Acidosis usually arises (1) from an electrolyte imbalance in which there is a significant sodium ion depletion; (2) as a result of an arrested or markedly limited carbohydrate metabolism in the body; and, (3) as a consequence of the existence of a combination of these two conditions.

II. A clear understanding and the proper treatment of acidosis are dependent upon an intelligent

conception of the basic principles of normal and disturbed fluid balance.

III. The treatment of the mineral type of acidosis consists usually of the intravenous administration of sufficient normal saline, Ringer's solution, or sodium r-lactate to restore the fluid balance and the depleted sodium ion concentration of the body fluids. In cases of the milder form and for prevention either of the first two solutions may be employed. In the severer form of the disturbance, however, sodium r-lactate solution is preferable.

IV. In the treatment of the organic type of acidosis arising from an uncontrolled diabetes, the principles involved are: (1) the administration of insulin to reestablish the arrested or depressed carbohydrate metabolism; (2) the intravenous injection of sodium r-lactate followed by the intramuscular injection of fortified Ringer's solution to restore the fluid balance and the sodium ion deficit, and, (3) the subsequent administration of the

Thyroidectomy*

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THYROIDECTOMY, the most dramatic of all operations, is a well standardized surgical procedure. There are several minor variations in operative technique which are of interest to those of us who are surgeons, but the purpose of this paper is to show what we may reasonably expect to accomplish by the operation.

Disease of the thyroid gland is fairly prevalent in this section. The diagnosis, as a rule, is not difficult. My six-year-old daughter says that "a goiter is a lump in your neck which makes you nervous." Nervousness is an important symptom in certain types of goiters. Some make the patient nervous, others make the family and friends nervous, and still others make the doctor nervous. Few conditions are more frightening than a violently active exophthalmic goiter.

Thyroid diseases tend to run in cycles and to chronicity. Even the most toxic goiters generally have at least relative remissions and exacerbations. This should make us temper our anxiety for prompt cure with some caution.

The treatment of goiter does not begin or end with operation. A great many goiters never require any sort of operation. They are purely medical. The ones which do require surgery need well-studied medical care before and after operation. I prefer to think of thyroidectomy as an incident in the treatment of certain kinds of goiters.

Occasionally a thyroidectomy is justifiable for cosmetic reasons. There are two main groups of goiters which should be operated upon.

(1) Hyperthyroidism, regardless of whether the overactivity is primary or secondary, nearly always requires operation. Subtotal thyroidectomy should be performed early in the course of the disease before there is damage to vital organs.

Most patients with hyperthyroidism can be gotten into condition for operation by quiet, rest in bed, sedatives, and the administration of Lugol's solution. They should be operated upon while the metabolism is falling and while they are gaining weight. When the metabolism is rising and they are losing weight surgery is risky. In this connection I want to go on record as being decidedly opposed to pole ligations and meddlesome, mincing operations upon patients with violently toxic goiter. Occasionally a patient with complications other than those of thyroid origin can be better handled by a thyroidectomy in two stages. As a rule if a patient can not be prepared for a subtotal thyroidectomy in one stage, I much prefer to wait for a

spontaneous remission. These remissions are certain to occur and it is better for the patient to get along for several years with some badly damaged organs than to die from a premature attempt at radical cure.

(2) Adenomatous goiters should be operated upon while they are still quiet. A great many of them become hyperactive later in life, and not a few undergo malignant degeneration. Operation is usually very safe in this group and they do not require extensive preparation.

Thyroidectomy in the hands of competent surgeons does not entail a high mortality. When performed adequately, and at the proper time, the mortality is about one per cent. This compares favorably with other elective major surgery. I would define adequate thyroid surgery as the removal of an amount of gland sufficient to get the patient well in the shortest possible time and to insure as nearly as possible a permanent remission in the disease. This may require the removal of one-half, five-sixths, nineteen-twentieths or in rare cases even all of the thyroid gland. In young adults with severe hyperthyroidism, I usually remove all of the gland except a tiny piece of the posterior capsule on each side. Patients beyond middle life do not require such extensive removal and children may fail to grow properly if too much is removed. Hyperthyroidism should not recur in more than five, or, at the outside, ten per cent of cases following this type of operative treatment. I feel that it is better for a few of these patients to require some thyroid feeding after operation than for us to have very many recurrences.

Every patient with a goiter requiring surgery presents an individual problem which must be worked out in the light of the teaching and the experience of the physician and the surgeon in charge of the patient. A vast store of useful information is available in the writings of the many great surgeons who have developed goiter surgery to its present state.

Basal metabolism reports should not be taken too seriously in the diagnosis or treatment of goiter. The test is a valuable help and should not be neglected, but one should rely upon the patient's history and physical signs to make the diagnosis, and use the metabolism reading to help decide just how bad the goiter is.

The essential steps in the technique of thyroidectomy are shown in a short moving picture of one of my operations.

*Presented to the January meeting of the Thermal Belt Medical Society held at Rutherfordton.

Ablatio Placentae

With Report Of A Case Treated By Abdominal Cesarean Section

E. J. CATHELL, M. D., AND J. M. ANDREWS, M. D., Lexington, North Carolina

ABLATIO PLACENTAE generically exists when the placenta, implanted upon the wall of the upper uterine segment, becomes practically or entirely detached in pregnancy, or in labor before the completion of the second stage. Hemorrhage and its sequelae are dominant symptoms. The line of demarcation between placenta praevia and ablatio is the site of the retraction ring.

The primitive conception of placenta praevia was that the placenta was invariably attached high within the uterine cavity, was separated with hemorrhage and prolapse, and was born before the child. As it became universally conceded that praevia means a primary attachment of the normal placenta in the lower segment of the uterus, the fundamentally important fact that a placenta, normally situated, might prematurely become detached with an alarming hemorrhage was entirely ignored, or ardently denied, by various authorities. In the early statistics the condition was included under the general term of placenta praevia. The development of knowledge on this subject in this last generation has given it its due place among obstetric complications.

The frequency of premature separation of the placenta varies a great deal. In private practice clinic ablatio will be found once in 500 births.

Eclampsia has often declared to be a disease of theories when considering the etiology. The same may be said of ablatio, for other than traumatic influences, the etiology is wrapped in numerous hypotheses, some of which are highly logical, while others are well within the realm of chimerical speculation. Numbers of earnest investigators have described diverse pathological alterations of the uterus, placenta and other organs, which are so characteristically variant one from the other as to lead to the belief that distinctive etiologic influences have been operative. The symptomatology in different cases shows extremely different manifestations, which again would thoroughly substantiate the opinion that ablatio is not a specific entity; they all have one conspicuous sign—hemorrhage, the result of placental separation. Finally, the etiology may be divided into the indirect or anatomic, and the direct, factors. In the former, the conception held by most authorities is that the cause of placental separation is the result of loss of continuity of the walls of the maternal-fetal

blood streams, the extravasated blood initiating the debiscence. The bleeding is secondary, a result of uterine contraction. The later or direct factors may be divided into:

1. Traumatic
2. Pathologic (inflammatory)
3. Toxemic.

The resistance of the body in different individuals varies greatly in the reaction to injury, large and small. In one, a seemingly trivial accident may be of serious import, while in another great violence may be followed by no ill effects. Inflammatory and degenerative changes are usually assumed to be responsible for nontoxic or pathological types of separation.

Toxemia as a cause results from faulty metabolism, endocrine dysfunction and from biochemical incompatibilities between the maternal blood content and the new emanations originating within the ovum. The complex presented by those patients who have organic disturbances (nephritic, hepatic etc.) with their premature separation, gives proof that at least one third of all examples of ablatio conform to the principles which dictate that they shall be classified with other obstetric toxemias, hyperemesis, eclampsia etc.

PATHOLOGY

Separation of the placenta is always accompanied by hemorrhage unless the fetus has been dead long enough to allow thrombosis to occur in the uterine sinuses. De Lee states that in all his cases external hemorrhage followed internal; so the rule in his cases is that the bleeding in abruptio placentae is first internal or concealed, then combined, external and internal. The macroscopic appearance of the uterine peritoneum is characteristic of a toxic apoplexy. The widespread infiltration of the muscularis reflects the hemorrhagic deposits of the surface. The feel of the uterine wall has been aptly described as comparable to that of soaked sole leather. Its contractile and retractile power is reduced to a minimum. The suffusion of the placenta with feeble attempts to form hematomas and the acute or subacute extensive thromboses of the villi are so typical that they harmonize with the uterine changes. Infarcts and frequently advanced degeneration will be found in the placenta.

SYMPTOMATOLOGY

A typical picture of ablatio is as follows. The woman is seized with a severe pain, feels the ab-

domen distended; becomes dizzy or faints; gives evidence of shock, pulse thready and weak; skin, conjunctival membrane and prolabia pallid; fetal movements suddenly become tumultuous, then quickly cease; internal hemorrhage continues and eventually some blood passes the vulva. Such a symptom-complex is the exception not the rule. And the diversity of these symptoms is controlled by:

1. The response of the sensorium
2. The nature of the etiologic factor
3. The location of the placental site
4. The degree of placental separation
5. The tonicity of the uterus
6. The condition of the blood.

PROGNOSIS

The mortality rate is influenced by various elements which are reflected in mathematical terms:

1. Early diagnosis
2. Segregation of cases into mild and severe
3. Whether absolutely or relatively concealed
4. The etiology
5. The method of treatment.

TREATMENT

The integrals which control the selection of the appropriate treatment are:

1. The condition of the mother (degree of anemia, shock and the presence of potential sepsis)
2. The condition of the fetus (dead at the time of intervention, or premature beyond the hope of saving)
3. The condition of the cervix (os dilatable, or tightly closed by rigidity etc.)
4. The contractility of the uterus.

The indications and the contraindications must be weighed in selecting the appropriate treatment. The methods of treatment may be divided into conservative and surgical.

Conservative:

1. Spontaneous
2. Rupture of membranes
3. Low forceps, breech extraction when condition permits
4. Rupture of membranes, cervicovaginal tamponade, and use of the eventual forceps
5. Hysterectomy.

Surgical:

1. Vaginal cesarean section
2. Classical section
3. Low cervical section
4. Extensive hysterectomy (Parro)
5. Manual dilatation.

Report Of Case

A white, married woman, aged 23, gravida II, para I, eight months pregnant, was admitted to

the hospital 12 hours after initial profuse hemorrhage, which awakened her at 8 a. m. She was severely shocked. Pulse 160 per minute, irregular and weak, b. p. 90/80. There was moderate constant vaginal bleeding through vaginal pack. The abdomen was the size of an 8 months pregnancy. No fetal heart tones or placenta souffle was heard. When the pack was removed the patient was bleeding moderately. Cervix not effaced, thick, hard and dilated $2\frac{1}{2}$ cm. Presenting part not felt.

Patient was delivered at full term, normally, two years previously. Appendectomy and left oophorectomy one year ago. Mother died with eight pregnancy following three weeks hemorrhage and still birth. No previous serious illness.

Well developed and fairly well nourished woman lying in bed, acutely aware of surroundings, complaining of thirst and in severe shock. Pulse 160, b. p. 90/80, pulse weak and irregular at times, face and mucous membranes pallid. Extremities cold and clammy. Abdomen enlarged to about 8 months pregnancy. No contraction elicited. Fetal heart tones and uterine souffle not heard. Patient was bleeding from vagina through vaginal pack inserted in home. On removing pack hemorrhage was severe and constant from cervix. Cervix was thick, hard and not effaced and was dilated $2\frac{1}{2}$ cm. The presenting part was not felt.

A diagnosis of premature separation of the placenta of unknown etiology was made. The lower uterine cavity, cervix and vagina were packed, foot of bed elevated, morphine gr. $\frac{1}{4}$ given and infusion of 1000 c.c. saline and glucose begun. Ice caps were placed to abdomen and blood taken for matching.

As soon as a satisfactory donor was obtained the patient was given 500 c.c. citrated blood. Her condition improved until the pulse was 130 per minute, regular and stronger, b. p. 110/80. At this time a high cesarean section was done under gas anesthesia with a small amount of ether. A dead fetus was delivered. As soon as the patient was returned to room she was given 500 c.c. more of citrated blood.

The patient's temperature in the second post-operative day was $101\frac{3}{5}$. There was a gradual decline thereafter to normal. She was given sulfanilamide beginning the first and continuing through the eighth day. Otherwise the course was uneventful. She was dismissed from the hospital on the eleventh day.

SUMMARY AND CONCLUSION

Premature separation is a grave emergency. Conservative treatment is the procedure of choice when possible and the mortality is less than in drastic surgical procedure. In choosing the type of treat-

ment all conditions and circumstances must be weighed.

Abdominal section is probably the major surgical procedure of choice.

Surgical Procedure.—Vaginal cesarean section has never been very popular for the treatment of ablatio. Hemorrhage obscures the field. The mortality rate is as high or exceeds that of abdominal section. One cannot inspect the uterus, which alone is the means of recognizing the main indication for a hysterectomy, the Couvelaire uterus.

Abdominal cesarean section must be considered a makeshift until a rational procedure for the conduct of ablatio shall be devised. The nontoxic types are not appropriate for the operation for anemia is not conducive to good results. Toxemia patients, likewise, are not suitable for an abdominal operation. In external hemorrhage cesarean section is 2.6 times more fatal than conservative means. In internal hemorrhage this formidable operation is five times as dangerous as the conservative measures. Cesarean section requires the following conditions.

1. The cervix shall be tightly closed, and not readily dilatable.
2. There shall be contributory obstetric complications which render vaginal delivery difficult or impossible.

Low cervical cesarean section has become the operation of choice by a few. The time required in rotating the head and applying forceps has some disadvantage over the abdominal section.

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BETTER MEDICATION FOR ASTHMA ETC.

(E. A. BROWN in *New Eng. JI of Med.*, Nov. 21st)

Capsules containing $\frac{1}{4}$ grain of ephedrine sulfate, $\frac{1}{8}$ grain of sodium phenobarbital and 3 grains of theophylline sodium acetate were dispensed over a period of 18 months to 189 patients in private practice and in an Allergy Clinic. All patients here reported on had bronchial asthma: extrinsic 80; intrinsic 50; mixed 10 cases.

In every case in which the usual doses of ephedrine and phenobarbital were adequate, the capsule described was equally or more effective. All patients were receiving treatment aimed at the causes. All except those who had side reactions agreed that the relief came on more quickly and was more complete than that given by other medications.

Of the total number, 13 complained of tremor, palpitation and headaches due—as proved experimentally—to the ephedrine in it. Six complained of nausea and indigestion. This was found to be due to the theophylline sodium acetate. Four complained of nausea, but continued to take the capsules containing theophylline. No case of sensitivity to phenobarbital was encountered. Two pa-

tients complained that all gelatin capsules caused pyrosis.

Five-hour enteric-coated tablets were given to a total of 117 patients, of whom 61 also received the plain capsule, since asthma occurred either during the day or during the first four hours following retiring. The remaining 56 patients had no asthma during the day but usually had symptoms arising four or more hours after retiring, and were given the enteric-coated capsules only. The 61 patients therefore, who received both capsules and tablets were those whose asthma might occur during either period of the night or both.

Of the 117 patients, 8 awakened 6 hours following medication free of asthma, but unable to fall asleep again. This state was attributed to the theophylline, and either this drug was omitted or additional phenobarbital was given.

Not all patients got relief at all times.

CHEMOTHERAPY IN ACUTE BACILLARY DYSENTERY

1. G. M. Lyon, Huntington, in *W. Va. Med. JI*, Feb.

Twenty-three patients with severe cases of acute bacillary dysentery were treated with sulfanilylguanidine, and 25 alternate patients with the same disease of a similar severity were taken as untreated controls.

The patients not receiving sulfanilylguanidine had temperatures of 102 to 105° the first week, bloody diarrhea, nausea, vomiting, cramps, tenesmus, prolapsus ani; in the second week, a lower temperature, diarrhea more purulent and a loss of strength and body weight; in the third week, a convalescence of varying degrees of severity and tardiness, accompanied by indigestion and loss of strength.

Of the patients receiving sulfanilylguanidine five were not influenced by the drug. Of these, two had accompanying pyogenic infections of importance. The other 18 all received great benefit from the drug. Generally, within 24 to 48 hours, a rather rapid fall in the temperature and in the leucocyte count, marked reduction in the number of diarrheal stools and remarkable improvement in consistency, and as to blood, pus, or mucus. This occurred in 24 to 72 hours after institution of the chemotherapy in all of the 18. There is reason to believe that sulfanilylguanidine is most efficacious in the first three or four days. Its use is attended with less toxic side effects than that of the related compounds.

BANANA DIET IN BACILLARY DYSENTERY

(L. H. BLOCK, Chicago, & A. TARNOWSKI, Dixon in *Dig. Dis. Jan.*)

Of 127 patients, 65 on banana diets and 62 on control diets which consisted of the usual institutional dietary regime, symptoms, weight, temperature, appearance of the rectum and sigmoid, and the mortality and morbidity rate of the patients in comparable groups indicate that the use of bananas is advantageous in bacillary dysentery.

IF PROTAMINE ZINC INSULIN FAILS to give the desired results, supplement regular insulin rather than increasing the dose of the protamine zinc insulin. Regular insulin, mixed with protamine zinc insulin, apparently is converted more or less completely into the latter. Care in the manipulation of the double syringe and the deposition of the insulins in *different* areas with the one injection avoids the insulins in *different* areas with the one injection avoids their admixture in the subcutaneous tissues.—Watson.

MAZZINI TEST—In our opinion the Mazzini test is an excellent test for the laboratory diagnosis of syphilis.—Breageale et al., Tucson, in *Jl. Lab. & Clin. Med.*, Jan.)

Gonorrheal Vaginitis in Girls*

ROBERT A. MOORE, M. D., Charlotte, North Carolina

GONORRHEAL VAGINITIS has come to be recognized as an important disease of childhood. Its possible physical effects are serious, and even more serious is the danger of causing lasting feeling of guilt and shame and of giving rise to abnormal sex habits.

FREQUENCY

It is difficult to estimate the frequency because so few of the cases are reported, and many go unrecognized. Vonderlehr, of the United States Public Health Service, estimates that there are over a million cases of active gonorrhea in the United States. Considering this number of possible foci, it is not unlikely that Jean's report of 5.3 per cent positives in 262 girls at dispensary clinics in St. Louis is not far from the right figure for this group in large cities. The incidence is probably much lower for private patients, and among children generally in smaller communities.

The condition is infrequent in the newborn, even when the mother at confinement has acute gonorrhea. This is in contrast to gonorrheal ophthalmia. It is most prevalent between the ages of five and seven. Abt states that 70 to 80 per cent of all cases of vaginitis are gonorrheal; Spalding says 79 per cent. Brenett *et al.* of 241 clinic cases found 79 per cent positive, 14 suspicious and 7 gonorrheal.

ETIOLOGY

The undeveloped state of the vulva and the absence of pubic hair exposes the vagina of the child to infection. The gonococcus is implanted on the vulva through indirect contact with an infected individual. An important source of infection is the toilet seat, usually so constructed that the vulva of the little girl comes in contact with its surface. Contaminated bed linen, towels, wash cloths, tubs and underclothes are other sources of infection. Careless or uncleanly handling by the nurse, maid or playmate is responsible for some cases. Benson found an infected parent was the source of infection in 50 per cent of a series. Reichert found the disease oftener transmitted from an adult member of the family than from one child to another. Studies of 121 cases disclosed genital infection in other members of the family in 108 cases.

SYMPTOMS

The acute state is characterized by a purulent greenish-yellow discharge, not conspicuous in the cleanly girl, or just after voiding. Greenish stiff

spots on the underclothes commonly arrest the mother's attention. The vulva, the surrounding skin, and frequently the thighs, are inflamed; the inguinal glands are palpably enlarged; the labia, clitoris and hymen are reddened, swollen and tender. Some investigators state that urethral involvement has no part in determining the course of the disease; Stein and others state that urethritis is an inevitable complication; while Le Tinde found no urethritis in the vast majority of his cases. The vagina and the vaginal cervix show inflammation and often ulceration, and in the submucosa the organisms are found. Bartholin's glands, undeveloped, are infrequently involved. In all young girls the cervical os is tightly closed and the endocervical glands are immature and not often involved. The relatively long cervix and tightly closed lumen usually prevent entrance of the gonococci. My search reveals reports of only 57 cases of peritonitis complicating gonorrheal vaginitis.

The rectum may also be infected by vaginal secretions; but, there are usually no symptoms, and as the rectal tissues are resistant to this organism it is unlikely that proctitis plays any part in causing recurrence of vaginitis.

DIAGNOSIS

The physical findings, examination of gram-stained smears, with use of the culture method when in doubt furnish the evidence. The culture gives a higher percentage of positives than the smear; and differentiates micrococcus catarrhalis, frequently present in the vagina, and the meningococcus. All leucorrheal discharges of girls should be considered of gonorrheal origin until proven otherwise. The complement-fixation test is only about 50 per cent reliable.

Specimens from the vagina can be taken by cotton swabs, or by inserting an ordinary glass catheter containing a ½ inch of saline to the upper limit of the vagina. Culture media may be inoculated, smear made and the discharge tested for its reaction with liquid nitrazene. Positive cases usually show a pH above 6. I have used the catheter method for several months and find it much better than the swab method. In case cultures and smears are repeatedly negative, yet the mother continues to find a spotting on the child's underclothes, the mother is shown how to make a smear and is given slides and swabs with instructions to obtain a specimen from the vaginal opening. A

*Presented to the meeting of the Mecklenburg County Medical Society, on the first Tuesday in October, 1940.

provocative test—2 to 4 per cent silver nitrate solution instilled into the vagina and washed out with saline after a few minutes and smears and cultures made the following day—may make the diagnosis.

PROGNOSIS

It is difficult to predict the duration of the disease. In less virulent infections it may subside in 3 to 4 weeks; but as a rule untreated or insufficiently treated cases last for months, even years, with frequent exacerbations. It is hard to say when a case is cured. Some say after three weekly negative smears; others, as Mueller, say examine every two weeks for the first year, and every three months during the second year. Stein believes that frequent negative smears must be obtained for six months before calling a case cured. One case I thought I had cured with sulfanilamide gave twenty negative smears during two months; then the twenty-first was positive. The reason for so many smears was because of a slight mucous discharge. The disease is seldom, if ever, carried over the age of puberty.

PREVENTION

Gynecologists, urologists and general practitioners—all who treat gonorrhea—should warn the adult and instruct him or her in measures necessary for the protection of the children. Taussig recommends U-shaped toilet seats in public lavatories used by children. Infected girls should be kept from school until at least four weekly negative smears have been made. I diagnose all cases of gonorrheal vaginitis as pyuria for the benefit of the girl and for protection against inquisitive neighbors. The parents are duly appreciative.

TREATMENT

Until the past few years numerous reports of various methods showed failure to obtain satisfactory results with any method. Silver salts, mercurochrome, potassium permanganate and picric acid were used. Perhaps better results could have been obtained with any of the antiseptics had the treatment been more persistent. Vaccine therapy has been used extensively but without much result. Gonococcus filtrate has apparently had its day. Fever therapy with bacterial vaccine, malarial infections, and hypertherm gave fair results; but this method of treatment in children is often worse than the disease.

In 1933 Lewis developed the idea that as gonorrheal vaginitis usually ceases spontaneously at puberty, treatment of children with estrogenic material might be of value. The child's vaginal epithelium is five or six layers, that of the adult twenty to thirty layers and resistant to the gonococcus. Lewis, using theelin, caused thickening of the mucosa and acidification of the vaginal secre-

tions—*pH* 4.8 to 6. Six of his first eight cases were apparently cured. In vitro the gonococci grow best in a slightly alkaline medium; if the *pH* falls below 6 they invariably die. It is likely that thickening and acidity have their parts in the cure.

Many others have used this estrogen treatment. TeLinde treated 159 cases with 1000-unit amniotin suppositories, and obtained recovery in every case. A follow-up of his first 100 from two months to two and one-half years showed 98 of them well. The average time for epithelial response was two weeks and negative smears a few days later. Results were not obtained when given large doses of amniotin orally, nor was there an epithelial response from estrogen in aqueous solution hypodermically, though sixteen out of twenty-two responded when theelin in oil was given. Matzer and Spector reported on 118 cases admitted to Philadelphia General Hospital ('35-'37) with eighty-one treated with progynon B hypodermically, 34 with vaginal suppositories and three given progynon orally. Three of the eighty-one cases failed to respond, and a follow-up of sixty-one from three to twenty-three months showed 10 per cent recurrence; of the thirty-four treated with suppositories one failed to respond and twenty-six of thirty-three followed from three to fifteen months without recurrence. The three treated orally did not respond. The suggestion is made that treatment be continued for eight weeks to safeguard against recurrence.

Lewis and Adler in treatment of eighty-two cases with 1,000-unit theelin suppositories obtained only 67 per cent permanent cures.

Matzer and Israel with ninety-three cases obtained 81 per cent cures.

Burpee, Robinow and Leslie had apparent cures in 41 of 47 cases with intramuscular injections of theelin in oil. They observed that acute gonorrhea required longer treatment than chronic, and regularity and duration of treatment appeared to be more important than the amount given in a single or total dose.

During the past five years the sulfonamides have proved effective. The reported percentage of cures has been lowered, due to late recurrences. Pelouze says that with sulfanilamide and sulfapyridine there is prompt cure in 25 to 40 per cent of dispensary cases, in 45 to 50 per cent of private and in 75 to 85 per cent of bed patients; and that sulfapyridine is 25 to 50 per cent more effective. The newer sulfathiazol gives a slightly higher percentage of cures than sulfapyridine. It has been found that where one strain of gonococcus is resistant to sulfanilamide change to one of the other drugs may bring about a cure. The results to be obtained are

usually manifested in a few days, rarely after ten days or two weeks of treatment.

In childhood vaginitis treated with these drugs the percentage of cures is somewhat lower, but when effective the cure is just as dramatic. Some give much larger dosage than others. The majority give half to $\frac{1}{4}$ adult dose, or $\frac{3}{4}$ grain per pound per day for the first few days, then cutting to $\frac{1}{2}$ grain per pound. A working plan in gonorrheal vaginitis in children is to begin with a sulfonamide and if cure is not obtained in ten days or two weeks, to change to another of this group; and if still no cure, to use estrogenic substance, preferably in vaginal suppositories of 1,000 units for eight weeks.

A personal communication from Dr. TeLinde states that he still considers amniotin suppositories the treatment of choice, and that, except for some experimental work with stilbestrol, he has used it exclusively.

The parent should be informed of the dangers of infection of the child's eyes, and of other members of the family, and given instructions somewhat as follows: (1) genitalia to be cleaned several times daily with mild antiseptic solution; (2) pad to be worn when there is any discharge; (3) separate care and boiling of underclothes; (4) taught proper use of or separate commode; (5) scalding of bathtub after use; (6) separate bed.

CASES

I am reporting seventeen cases of gonorrheal vaginitis treated within the past three years. There were three other cases, two in negroes, not included because of lack of coöperation.

Eight were between the ages of four and seven, three under four, six between eight and ten. Thirteen occurred in patients of the better class, four in average, none in lowest. Only two of these children were undernourished, in ten instances the patient was the only child, two patients had one sister each, and in the other four there were brothers, but no sisters. Eleven cases were acute. Two of the chronic cases were found on routine examination. One of the acute cases was allowed to drift into the chronic stage before diagnosis. This girl was treated six months previously for urethritis which responded to simple treatment.

In an attempt to find the source of infection, all mothers and maids were examined by their doctors; two were so chagrined that they were examined in another city. One mother and two maids were reported positive. The fathers, unfortunately, were not asked to be examined. One source of infection was at a girl's camp, as discharge appeared four days after attending the camp. One other source was probably at school. This girl was seen

with an acute attack and later a classmate was seen with an antedating chronic case. In only two of the chronic cases was there complaint of symptoms, and these only those of mild irritation of the labia.

One case was complicated by urethritis, one by bleeding from ulceration posterior to the urethra, which cleared in two weeks. A three-year-old girl had the most profuse discharge and she fought like a little tiger when she was treated. Her grandmother spanked her one day while treating her and so spattered pus into her own eyes. Three days later she had a severe gonorrheal ophthalmia, which cleared under treatment with sulfanilamide.

Vaginal cleanliness was attempted in all the cases with potassium permanganate or chlorozene, either by douches or simple sponging of the labia. For the last two years douches have been omitted.

Sulfapyridine was used on three of the girls but all vomited after first few doses and sulfanilamide was substituted.

Neoprontosil was used on two occasions without results.

Sulfanilamide was used on thirteen. The dosage approximated three-fourths grain per pound per day for the first few days, sometimes as long as a week, and never under the third day and then dropped to one-half grain per pound, and was continued from ten days to as long as a month, two weeks being the average. Two developed rashes on the tenth and eleventh days, and two became short of breath and moderately cyanotic, but were able to continue the treatment. All were ambulatory and little disturbed by the medication. No attempt was made to determine the blood concentration. There were no results in eleven, though six had the course of the drug repeated. In two the results were doubtful, but sulfanilamide received the credit.

One of these was a case which had been treated by a physician in a nearby town for four months with 500 units of theëlin hypodermically biweekly and potassium permanganate douches. This case was treated with 1,000 units of amniotin daily for twelve weeks and during this time had 20,000 units of theëlin. Six weeks after stopping the treatment she had a clinical recurrence with spotting of panties, redness of labia, and pus in the mouth of vagina, but with no organisms being found. She was given sulfanilamide for two weeks and the theëlin and amniotin for a month. The condition cleared promptly and has been cured for two and one-half years.

In the other case neoprontosil had been used for a month without effect, and theëlin used for six weeks with no visible thickening of the vaginal

Physiology of the First Portion of the Digestive Tract

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THE fundamental functional purpose of the alimentary tract is to make foodstuffs absorbable, then to carry them into the lymph- and bloodstreams and eliminate, via the feces, the indigestible and undigested remainders.

Of the six foodstuffs, three (the vitamins, inorganic salts and water) are already in a form easily transferred across the intestinal wall. The other three (proteins, carbohydrates and fats) must undergo extensive changes before they can be absorbed and metabolized.

Five factors, coördinately and interdependently, interweave their effects upon the foodstuffs mentioned as these pass through and out of the alimentary canal—mechanical, chemical, nervous, hormonal, bacterial.

Because these forces, to a greater and lesser local degree, act conjointly and concurrently, it becomes a difficult, if not impossible, task to discuss each separately. Textbooks on physiology must perforce do so, but they cannot, of course, be consistent. Much of needed emphasis on functional unity is sacrificed to diversity of presentation.

It is indeed quite practicable, avoiding too flagrant distortion and fragmentary delineation, to give an account of the mechanical movements noted in the alimentary canal, and then dwell on the chemical changes, since hormonal and bacterial effects are quite altogether chemical in nature. . . . and, in the newer physiology of nerve stimulation, a chemical mediation, certainly of the autonomic system, is definitely posited.

Perhaps the most logical and sequential consideration of activities in the digestive tract is to describe all that happens consecutively in each of the larger anatomical divisions and subdivisions—the mouth the esophagus, the stomach, the duodenum, the remainder of the small, and the large intestines.

Let me say, in a parenthesis, that it would be highly interesting to write a textbook, first detailing the physiology of all organs; then short, separate chapters on the nine systems; and finally, briefly interrelating and unifying organic and systemic functions from the viewpoint of the organism as a whole.

The process of breaking down nutrient material for body use begins in the mouth. It really begins in the market and the kitchen, where food is prepared for ingestion, by cooking it, making it palatable, appetizing etc.

If one percent of the thought and energy expended in seductive advertising of foods and preparing it temptingly, if not scientifically, for our consumption, were devoted to a quantitative and qualitative selection and ingestion of a proper and adequate diet, simple and satisfying, our digestive systems would not be so outrageously and fatally overworked. Also we would have more money for income taxes and defence preparations. What economic and physiological jays we be, stuffing our longsuffering intake and uptake and eliminating organs with unacceptable volumes, and non-metabolizable and highly uneconomical so-called edibles.

Once in the mouth foods are subjected to a vigorous process of comminution—the pulverizing process of mastication. Teeth, tongue, lips and cheeks, and the appropriate powerful muscles cooperate in grinding into small pieces the bolus of food (which should not be larger than five cubic centimeters—about a teaspoonful).

Lifting and lowering, forward and backward, and also sideward movements of the lower against the upper jaw crush the food into small particles, not much larger than two mm. in diameter, provided a sufficient length of time is allowed. Too often our hurrying Americans bolt inordinately big masses and wellnigh dam (add an *n* if you like) the pharyngeal passage, the tongue vainly trying to throw it back for more extensive chewing.

Contrawise it is well to accent the futility of chewing our food excessively long. Gladstone used to say: "We have 32 teeth, therefore each mouthful should be chewed 32 times, to and fro and sideways." This is masticating zeal, without physiological knowledge. There is a golden mean—between the bolting, impatient American, and the placid, unhurried, great Englishman.

The tongue, cheeks and gums are richly supplied with very sensitive nerve endings to determine the desirable size of food divisions. The tongue is endowed with extremely delicate touch sensation—as any dentist will tell you, who cannot feel with the highly responsive fingertip a slight unevenness on the teeth, easily discerned by the tip of the tongue.

The intricate and graduated movements of the masticating organs demand a corresponding effective innervation—they all correlated by the inferior maxillary branch of the fifth cranial.

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SURGICAL OBSERVATIONS

OF
DAVIS HOSPITAL STAFF
Statesville

THE MANAGEMENT OF SEVERE CASES OF HYPERTHYROIDISM

In severe cases of hyperthyroidism it is often difficult to bring the basal rate down rapidly, and to get them in condition for a thyroidectomy. However, any extensive surgical procedure in some cases entails a great risk and, for this reason, occasionally it is necessary to treat these patients differently from the treatment of the average case of hyperthyroidism.

Primarily, we depend upon the use of iodine in some form, usually Lugol's solution, prolonged rest in bed and the administration of large amounts of fluids. Where the metabolic rate continues high and does not come down as rapidly as it should, even when preparatory treatment is prolonged, it is best to do a ligation of one pole, possibly both. Usually it is very satisfactory to ligate one pole, wait a few days, then ligate the opposite pole. Following this, the hyperthyroidism should decrease more rapidly and the patient will usually get in condition for thyroidectomy much more rapidly than otherwise.

The question arises as to how long we should wait after ligation of the upper poles of the gland before doing a thyroidectomy. Usually about two weeks is sufficient, although anywhere from one to four weeks may be necessary.

In any event the patient should have a continuation of the preparatory treatment. Absolute rest in bed and repeated basal metabolic rate determinations are necessary in order to determine the exact time the patient is ready for operation. It is better in these cases to wait a longer time than is ordinarily thought necessary, rather than rush into operation too soon.

Where the superior poles have been ligated, there is a tremendous decrease in the blood supply to the gland and consequent reduction in the toxemia. This, together with the general preparatory treatment, is usually sufficient to get the patient in condition for operation.

A careful study of each patient from every angle should be made. We must not depend entirely upon the basal rate help or any other one sign or symptom. Experience over a long period of years with many thousands of thyroid patients has shown over and over again that a complete and careful study of the patient must be done, in addition to the usual preparation for thyroidectomy.

Early diagnosis and early treatment of hyper-

thyroid cases will usually prevent the necessity for ligations.

THE ADVANTAGE OF STEREOSCOPIC OVER FLAT X-RAY FILMS OF THE CHEST

ANYONE who has examined flat x-ray films of the chest showing pathologic changes, and then stereoscopic films of the same chest, has been impressed by the remarkable additional information that may be derived from stereoscopic examination.

In many cases, of course, only a flat film is necessary, but we have found stereoscopic films extremely helpful in making an accurate diagnosis in obscure conditions, as well as those in which no film shows disease.

In making a careful study of the chest, after the physical examination is completed, a supplementary examination or a stereoscopic x-ray film will reveal many things which ordinarily cannot be found by a physical examination, also some things which are not ordinarily seen so readily on a single flat film. In every obscure chest condition there is need for stereoscopic x-ray examination of the chest. Where there is demonstrable disease on physical examination, a stereoscopic x-ray examination also is most helpful.

THE TREATMENT OF KELOID SCARS

KELOID scars are sometimes painful and distressing and may give considerable trouble, from their size and location. Some patients are prone to have keloids. Even a scratch may start the formation of a keloid, which is thick, painful and distressing. Colored people are more prone to this disease than white, but a large number of white people have keloids.

Simple excision of any growth of this kind usually results in a recurrence in a few months.

We find that simple excision, using the greatest care to approximate the skin edges, afterwards giving x-ray treatment to this area, greatly reduces the number of recurrences.

VITALLIUM BONE PLATES

AFTER using vitallium bone plates and vitallium screws over a period of several years, we have found them most satisfactory for bone work generally.

The composition of vitallium is such that there is no electrolytic reaction and, apparently, no irritation of the bone. Usually we find on removing vitallium bone plates, even months after they are applied, that the screws have not come loose, as they would often do when steel plates and screws were used.

It has been shown, where ordinary steel plates

and screws were used, that an electrolytic reaction caused the screws to become loose, often interfering seriously with the progress of healing.

Not only does vitallium seem not to interfere with healing but in a number of instances where vitallium plates have been removed, especially in younger people, they have been almost covered with a firm growth of bone. Usually also there is no discoloration of the bone tissue, as in the case of steel plates.

A number of times in this department, we have mentioned the use of vitallium plates and screws and the fact that it was extremely satisfactory. After more than three years of use, it has been found to be a satisfactory method of internal fixation.

Due to the non-irritating qualities, it is usually possible to leave vitallium plates on for an indefinite period of time and in slow-healing fractures this is an enormous advantage over steel plates and screws.

With the rapidly increasing number of fractures of the various bones of the body, for which internal fixation is necessary, the use of vitallium is an enormous help and a great satisfaction to those who do bone surgery and handle fractures generally.

SURGERY OF THE KNEE JOINT

THE knee is a very complicated joint, susceptible to many disabling conditions. One of the most common conditions we have to deal with is a loose internal cartilage. When a knee joint becomes locked from a loose cartilage the pain is severe. Spasm of the muscles which move the joint causes the joint to become locked or fixed. Sometimes when patients who have had this condition for some time they can jerk the leg in such a way as to unlock the joint, but very often they cannot do so. Loose particles of cartilage, sometimes present in the knee joint, are called joint-mice. They may vary in size from a small piece that can hardly be seen up to a size as large as the end of the thumb. These also cause a lot of trouble. Fat pads about the joint, especially anterior fat pads, sometimes become hypertrophied and elongated and may cause trouble.

The internal semilunar cartilage becomes dislocated more often than the external. This dislocation usually comes from great strain on the knee. With the fat firmly fixed the body twists and thereby pulls loose the internal cartilage. Sometimes people who play basketball develop trouble with the semilunar cartilage, especially the internal.

The most satisfactory treatment is surgical removal of the offending body. This usually gives immediate and permanent relief. Proper surgical care of the elongated or hypertrophied fat pads is

important also and careful attention to this is necessary.

Any patient with trouble with the knee joint should receive a thorough examination, including x-ray. The history of the case should be carefully investigated. Often a history of long-continued trouble with frequent recurrences will be brought out.

The joint must be carefully handled and any loose bodies or cartilage should be removed with extreme care. In years past there has been a belief common among doctors that to open any joint would invite infection and disaster. Our experience in many operations on the knee joint has been very satisfactory and the danger of infection is no greater than that of infection in the abdomen following a carefully prepared abdominal section.

AN UNUSUAL CASE OF PERFORATION OF DUODENAL DIVERTICULUM

RECENTLY a man was admitted here with symptoms suggestive of a perforated pyloric ulcer. Immediate operation revealed a perforation through a duodenal diverticulum which arose from the second portion of the duodenum and extended backward and upward. It was necessary to mobilize the duodenum in order to locate and free up the duodenal diverticulum and close the opening into the duodenum. The diverticulum was of medium size and the entire end had sloughed off through acute inflammation—probably very much like that of a perforated or gangrenous appendix.

A small longitudinal incision was made through the pyloric end and through this a suction tube was passed and a large amount of liquid material removed from the stomach. A careful exploration was made of the internal opening from the duodenum into the diverticulum and of the duodenum for other diverticula, possible ulcerations, or sources of possible hemorrhage after operation. The liquid material in the stomach could have been removed by aspiration, but the distention was so great that it was thought advisable to do this by suction rather than to risk an attempt to remove it by a stomach pump through the mouth. This seemed to be a happy solution of the problem of emptying the stomach. The longitudinal incision in the duodenum was closed vertically, which made it wider and tended to prevent any possible constriction later on.

In this case, owing to the peculiar nature of the perforation, it was thought advisable to drain. Soft-rubber tissue tubular drains were placed high up and brought out through a stab wound to protect this area.

Accurate knowledge of the anatomy of the duo-

denum at this point is important because of the relationship between the duodenum, the peritoneum, the right kidney and the posterior peritoneal structures.

The patient was not in good physical condition since he had not been well for many years, but he did make an excellent recovery. It is interesting to note the history of this perforation. While it occurred twelve hours before admission to the hospital and the rigidity of the abdomen was characteristic of a perforated intestine, especially a pyloric ulcer, yet the general physical condition was not one that you would expect in a condition of this kind. This was due to the fact that a diverticulum had become perforated and, being some little distance from the pyloric end of the stomach, there was evidently a pylorospasm; and while some material had escaped through this passage yet not nearly so much had escaped as would have had the perforation been along the anterior wall of the first part of the duodenum, or the anterior wall of the stomach.

The majority of perforated ulcers found in this clinic have been in the pyloric area, usually on the duodenal side and on the anterior wall. Where a perforation of this kind occurs, especially if it is of the usual size, it allows the gastric contents and also the back flow of bile to pass directly into the peritoneal cavity and sets up a violent peritonitis, the mortality of which increases about ten per cent with each hour of delay.

In removing material from the abdomen which has escaped from the stomach, duodenum, or intestine, by using suction, which operates without trauma to the peritoneal surface, we can save many patients who would perish if the abdominal cavity was mopped out with gauze, as was the custom many years ago.

The management of perforated ulcers consists of immediate operation, removal of all the escaped fluid and inflammatory products present in the abdomen by means of suction and careful closure of the perforation. Following this the abdomen is usually closed without drainage.

TRAGEDIES AND CALAMITIES OF SURGERY

(A. W. Eckstein, *Providence in R. I. Med. II Jan.*)

A boy of 10 years old had a gunshot wound. He was given tetanus antitoxin; wound cleaned and dressed by his family physician. Ten days later severe infection of the hand with cellulitis to shoulder. No story was obtained of his having tetanus antitoxin. He was given a second dose of tetanus antitoxin without being tested for sensitivity to horse serum; and died of anaphylactic shock before aid could reach him.

A laborer sustained a bruise of his foot from falling co-bloestones. His wound was dressed by his family doctor. A week later he was admitted to the hospital with a black

gangrenous foot, generalized rigidity and fixed jaws. A man working in a road gang should have received prophylactic tetanus antitoxin.

A man 45 years old had a simple cholecystectomy done, and was given an intravenous saline infusion. This was followed by chills, shock, and death in two hours. Investigation proved that he died from impurities in the solution.

An emaciated male of 60 had a small cancer of the lower lip. It was decided to excise under evipal anesthesia. A minimum dose was started intravenously, slowly. Before 2/3rds was administered the patient became unconscious, cyanotic, pulseless and respiration ceased. This operation could have been done under local novocaine block.

A woman, 46, came for operation for hemorrhoids. She was given nitrous-oxide-ether anesthesia. When I commenced to dilate the sphincter in preparation for the hemorrhoidectomy I was told by the anesthetist that the patient was pulseless and that respiration had ceased. A post-mortem examination was performed. The cause of death was given as pulmonary collapse.

A man with epithelioma of the hand was prepared for excision and for skin graft. Given nitrous oxide followed by ether, during the ether induction he commenced to vomit and drowned in his food. He had been given no breakfast, but as dinner time had arrived and there was no order for withholding dinner, he had been given his dinner.

A woman 45, with an acute upper respiratory infection had an acute cholecystitis. Operation was deemed urgent, 150 mg. of potocaine was given spinally. The day following operation she developed paralysis of her legs ascended to involve the respiratory center. She was in a Drinker respiratory for 5 weeks and then expired. No autopsy was obtained. She died, no doubt, from sequelae of spinal anesthesia.

An elderly man suffering from empyema was booked for a thoracotomy under local anesthesia. En route to the operating floor he became cyanotic and died before help could get to him. At post-mortem his upper set of teeth was found jammed tight in his posterior pharynx causing complete obstruction. Because he was to have a local anesthetic his false teeth were not removed on the ward.

A tiny woman 72 had all the signs of intestinal obstruction. Her abdomen was immense. The diagnosis of ovarian tumor was made. Oophorectomy was done in great haste, tumor 54 lbs. removed. The patient remained unconscious for 72 hours until her death. No urine. Attempt made to catheterize her ureters did not go far into the ureters. While no postmortem was obtained in this case I feel that her ureters were tied off in the haste of the operation.

Man of 30 had a gangrenous appendix removed. On entering the peritoneum the operator accidentally cut into small bowel. Because of bad condition of patient the incised gut was closed over with only a single layer of fine silk and the appendix immediately removed. The wound was just as hastily closed up tight. Death of general peritonitis in 8 days. At autopsy the perforated small gut was found wide open pouring out its contents.

Woman, 45, said to have an inguinal hernia. The surgeon decided that a piece of tissue he grasped in his forceps must be the sac. Incision, exodus of large quantities of feces. He had cut into the sigmoid. This rapidly closed with three layers of sutures but the *b. coli* had spread far and wide. Death.

My teachers cautioned care about the urinary bladder. I have cautioned my pupils. One of my internes said

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CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.
High Point, North CarolinaSHOWING A CERTAIN AMOUNT OF STUPIDITY OF THE PHYSICIAN IN CHARGE,
THE SAME BEING MYSELF

The patient was under my observation for a number of years for a variety of troubles. My falling in the trap occurred during the last episode recounted in this history. What had gone before should have made me wary. A partial extenuation might be found in the fact that the chief diagnostic error was made "in the wee sma' hours o' the nicht" when one's faculties are somewhat at ebb. Fortunately, the error was not fatal.

On January 1st, 1932, a 51-year-old minister complained of pain in the lower right abdominal quadrant. He had had his first such attack in July, 1931, with sharp pain in the lower right quadrant, and had had recurrent attacks of increasing severity. Two of these had been attended with fever, nausea and vomiting. There was no other symptom except some frontal headache.

His past history threw no light on his trouble. He had had the common diseases of childhood, and had suffered from sciatica at intervals during the past few years. He had had a varicocele operation at the age of 20.

His habits were good except for the fact that he was highly emotional and worked at unduly high tension and couldn't relax as well as he should.

His father died at the age of 60 of an abdominal cancer, his mother at 62 of brain tumor; 1 sister well; 2 died of influenza, 1 of heart disease at age of 25; 3 brothers died of influenza, one of tuberculosis aged 21. Wife well, no children.

He was a man of heavy build. His head and neck were negative, chest rather barrel-shaped and showed a moderate degree of emphysema, lungs otherwise normal. Abdomen showed 2 spots of tenderness, one at McBurney's point and one close to right costal margin at the midclavicular line. There was moderate right-rectus rigidity. Genitals and extremities negative. Temperature before admission to hospital was 98.6, pulse 76, respiration 18, b. p. 150/70.

Diagnosis: Appendicitis, subacute, with possible associated gallbladder disease.

He was operated on promptly by Dr. J. T. Burrus, through a right-rectus incision, and a kinked, adherent, subacutely inflamed appendix was removed. On palpating the gallbladder, the surgeon reported that it seemed normal. The wound was closed without drainage.

On January 8th, 1932, while still in hospital, the laboratory reported an eosinophilia. Stool examination showed cysts of *Entamoeba histolytica*. It now develops that in 1916 one of his brothers, who had been in the British army in Saloniki, had had an "enteritis" lasting 6 months, and that the patient had been closely associated with this brother during this time, helping in the nursing etc. Also, the same brother had worked for a while in a military infectious hospital center near Cairo, Egypt. The patient himself had never had any chronic or recurrent diarrhea or any blood in his stools.

Supplementary Diagnosis: Amebiasis, carrier. I ordered some stovarsol for him, but he would never come around to the office for further treatment after leaving hospital.

In October, 1932, he had a brief attack of what seemed pretty obviously to be acute cholecystitis with jaundice. Magnesium sulfate gave relief.

April 1st, 1936. Patient was seized with epigastric pain of moderate severity about 10:30 last night. He refused to have me called. The pain lasted some hours, and then he vomited. Then the pain got severe and I was called at 4:00 a. m. I found him sitting up in bed, stock still, with a rather typical anginoid facies. He seemed to be in extreme pain. A hypodermic of $\frac{1}{2}$ gr. morphine sulfate and 1/75 gr. atropine sulfate gave only partial relief. His abdomen was tender deep in the epigastrium, but nowhere else. The right hypochondrium was not particularly tender. There was no muscular rigidity. He had some gaseous distention. He said he had a little precordial pain, but the pain started and was most severe in the abdomen. B. p. 184/100. Nitroglycerin 1/100 gr., under the tongue brought the blood pressure down to 154/90 and seemed to give very transient relief. The pain soon recurred. He was then given an inhalation of trichlorethylene. This was followed by more relief than all other measures afforded, and seemed to relieve permanently. I stayed about 1½ hours and then left him comfortable with instructions to stay in bed.

Diagnosis undetermined; but probably an abdominal type of angina following moderate abdominal pain and gaseous distention perhaps due to amebiasis.

The patient was advised to stay in bed and to have another stool examination for *E. histolytica*, also an electrocardiogram.

The stupidity referred to in the title is the lack of emphasis placed at this time on the very definite history of recurrent attacks of gallbladder disease. Because the pain was epigastric, rather than right hypochondriac, and the tenderness likewise, and

because of the patient's general appearance, sitting up stock-still with a rather ashen face, and because of his hypertension, the gallbladder history was disregarded and abdominal symptoms of angina pectoris considered as the likely diagnosis. A closer analysis of the symptoms, however, would make one consider the following factors as of significance: recurrence of pain after the effect of the nitroglycerin had worn off, while possible, in angina pectoris, is unlikely with the patient at rest in bed; prolonged relief following trichlorethylene excludes coronary thrombosis as the diagnosis. These points should have led to a more serious consideration of gallbladder disease, especially a ball-valve stone, as the cause of the symptoms.

The following day, April 2nd, the patient became very tender in the right hypochondrium, and the diagnosis was revised to that of probable gallbladder disease, and the patient taken to the hospital. A slight jaundice was now noticeable. Under sodium amytal-ether anesthesia a right rectus incision was made and 2 gallstones were removed from the common duct by Dr. Burrus. These stones were the size of filberts, but rather elongated. Then a cholecystectomy was done. Dr. Burrus noted at this time that the pancreas felt a little thick and edematous. The wound was closed with a cigarette-and-wick drain and the patient recovered uneventfully and has been in good health ever since. Curiously, no evidence of amebiasis was found during this stay in hospital, though the search was made. The patient had never accepted prolonged treatment for it.

Final Diagnosis: Gallstones.

The diagnostic error has been discussed already. Of course, if such an error has to be made, it is safer to treat the patient for coronary disease till proved otherwise than to subject a patient with serious coronary disease to an unnecessary laparotomy. The fact that I had developed rather more interest, perhaps, in cardiology than in gastroenterology, may have been an additional factor in leading me astray. Moreover, I had heard very shortly before encountering this case of coronary pain being relieved by trichlorethylene, and, having some with me, tried it, and failed to realize that it might relieve any kind of pain due to involuntary muscle spasm. We are constantly warned, and rightly so, to beware of treating coronary disease with abdominal symptoms as primary abdominal disease. This case illustrates the reverse error, far less dangerous, but an error none the less.

I consider it more important to publish our diagnostic errors, than our successes. We learn more by our errors. My revered teacher, Dr. M. How-

ard Fussell, used to say, "Acknowledge your mistakes, but do not make the same mistake twice!" The very acknowledgment helps to avoid a repetition of a mistake, and acknowledging it in print may help someone else to avoid making that mistake even the first time.

TRAGEDIES—from p. 66

this never could happen. The very next day as he was doing an inguinal hernia operation urine spurted after he had made an incision into what he thought was the hernial sac.

I have seen 3 cases of coronary thrombosis following operation.

Post-operative hemorrhage today is due to carelessness or accident. I have seen 6 such cases. Saved if immediately explored.

Tragedies caused by emboli, we have no way of combatting and no way of foretelling.

Volkmann's contracture—bandage had been entirely too tight.

Cellulitis of the scalp—he was given ether; the sutures were removed and the wound was laid wide open, this was found to contain dirt and gravel.

In a wound which had been dressed for 6 mos. after removal of a splinter, x-rays disclosed a piece of wood 3 in. x 1½ in. in a child's thigh.

In applying a dressing with a drainage tube see that the tube is fastened securely to the skin with sutures, as well as to the outside dressing.

Two cases of left wrist drop following operations for inguinal hernia. The elbow perhaps was leaned on during the operation, the arm of the patient not placed properly on the table. It might have been caused by the rigid band that is used to fasten the diaphragm of the blood-pressure stethoscope to the patient's arm.

A foot drop followed a simple cholecystectomy on one of my patients a year ago. He had to wear a brace 3 months and it was 6 months before he recovered. The leg strap may have been applied too tightly, or the bed clothes may have been tucked down too tightly so as to bring pressure on his foot hyperextending it while he was recovering from ether.

THE SEX HORMONES AND THE ENDOCRINE BALANCE

(W. Cramer, St. Louis, in *Bul. N. Y. Acad. of Med.*, Jan.)

There is a possibility of inducing profound changes in the pituitary and the other endocrine organs by prolonged administration of estrogenic hormones. This is more likely than the more remote chance of inducing cancer of the mamma. The therapeutic value of the estrogenic hormones is so high that their use should not be discredited by either overrating or underrating the dangers resulting from their use. There is no danger in the therapeutic administration of an estrogenic preparation over periods of several months, in doses just sufficient to produce the desired effects. When this hormone has to be given over a year or several years, the danger of inducing endocrine changes can be avoided by giving the doses in courses of three or four months, interrupted by periods of rest. The administration of estrogenic hormones by the inoculation of pellets is, I believe, dangerous and inadvisable.

In many cases more than one endocrine organ is involved. Examination of a case of an endocrine disease should, therefore, involve the examination of every endocrine organ.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

DOCTOR PAUL BRANDON BARRINGER

I thought, as Dr. H. C. Henry and I looked upon the flower-covered casket rolled into the chapel of the University of Virginia at mid-afternoon of January 10th, that a link binding the day with distant days had been broken. The dead body of Dr. Paul B. Barringer lay in the casket. His students—and there must be thousands of them—call him “Paul B.,” if they do not call him “old Paul B.” I thought of the vicissitudes through which he had lived since that day of his birth in Cabarrus County in North Carolina in 1857. Even in quiet, monotonous times eighty-three years is a long time for a human being to live. And existence is more hazardous when the times are perturbed; and in such times a year may be in the number and in the quality of the deeds done in it the equal of many years. I thought, too, as I looked upon the flower-covered casket, that back, far back, in the years I could see a little boy being ridden on the foot of a grim, bewhiskered, solemn-looking soldier-man, and that the little boy, three years old in 1860, was Paul B. Barringer, and that the silent, professor-soldier had become, two years later, the immortal Stonewall Jackson.

The infancy and the childhood of Paul B. Barringer were all entangled in warfare. His father, Rufus Barringer, a Confederate cavalryman, came out of the Civil War a brigadier-general, whose life had remained in his body throughout almost a hundred engagements. Though he escaped death on the field of battle, and lived into old age, he did not escape frequent wounds. The mother of Paul B. Barringer was Eugenia Morrison, whose father, a Presbyterian minister and a teacher, was the first president of Davidson College. Another daughter of the minister became the second wife of Stonewall Jackson. And in the home of that maternal aunt the child and the boy, left motherless himself in infancy, spent many happy, inspiring days. The wife of General D. H. Hill was another maternal aunt, and so also was the first wife of Judge A. C. Avery, of North Carolina's Supreme Court. And Judge Avery had been a Confederate officer. And the paternal grandfather of Paul B. Barringer was a brigadier-general in the War of 1812. When Appomattox came, Paul B. Barringer was a lad of eight years. He lived also

through the Spanish-American War, the first World War, and Europe had been ravaged again by warfare before his casket was rolled into and out of the University Chapel.

Though he had heard in infancy the roll of the drums, and though warrior-blood coursed through his vessels, he was a genial, peaceable man, interested throughout his long life in education and in conservation, rather than in warfare.

Had Dr. Cyrus Thompson gone back to the University of Virginia after his one year in medicine there instead of to Tulane, I believe he and Dr. Paul B. Barringer would have been graduated together in 1877. When Randolph-Macon was celebrating, a few years ago, the hundredth anniversary of its beginning, Dr. Cyrus Thompson, a member of the Academic Class of 1875, was one of the Nestors of the occasion. On the Saturday of that joyous week in his long life, I put him in my car and sent him up to the University of Virginia, where he had not been since 1876. On that night, in my home, he told me, with deep satisfaction, that the best thing he had seen on that day of many memories was old “Paul B.,” as they met, by chance, on the University's Lawn. And Dr. Thompson chuckled, as he remarked that they recognized each other from afar, though they had not seen either the other for almost a hundred years!

By 1884 Dr. Barringer was established at Davidson College as college and as village physician. He had got back to the home of his maternal grandfather, the Rev. Robert H. Morrison. But his coming to Davidson had been preceded by a few years of practice in Texas and by studies in New York and abroad. He was probably unconsciously preparing for teaching, for he was a natural-born teacher. At Davidson College he soon found himself tutoring students in medicine—the old style preceptorial work. And most of those students were sent by him, of course, to the University of Virginia. Though I do not think Dr. Barringer's preparation of students for the study of medicine was done as a member of the faculty of Davidson College, yet his teaching there must have been the first teaching of medicine done at or in a college in North Carolina. In that sense Dr. Barringer was a pioneer—and a youthful pioneer, too, as Dr. Richard H. Whitehead was when he became the head of the medical school at the University of North Carolina in 1890. Dr. Barringer had had the proffer of the headship of the medical school at Chapel Hill in 1889, but he declined it, because he sensed that he was going to receive a call to the medical school of the University of Virginia. He was called to that school,

and he went to it, in 1889, and there he remained most of the rest of his long life. There he taught physiology, and materia medica; and he probably could have taught anything else in the medical curriculum, so universal was his knowledge.

Until Edwin Anderson Alderman came from Tulane in 1904 to the presidency of the University of Virginia, that institution had never had a president. Its executive officer had been known as the Chairman of the Faculty. For several years prior to Dr. Alderman's coming Dr. Barringer had been Chairman of the Faculty.

For almost seventy-five years, ever since its beginning, the University's medical teaching had been almost wholly didactic. There were no hospital beds at the University of Virginia. Clinical medicine was not known there. Dr. Barringer was a practical man, and he believed that patients were a necessary part of a medical school. He assembled the first fund and built about 1900 the first unit of the University's hospital—now a magnificent institution of several hundred beds. Dr. Barringer encountered objections and he experienced difficulties in providing clinical material for the medical school. But in that effort he was again a pioneer. It is well that his name has been attached to a division of the present University Hospital. He made it possible.

Soon after 1900, Dr. Barringer purchased an old plantation near Charlottesville, and on it he established a private sanitarium for nervous and mental patients. Dr. O. C. Brunk, of Richmond, was taken from his staff to the Superintendency of the Eastern State Hospital at Williamsburg. Dr. H. C. Henry, now the Director of State Hospitals of Virginia, and for several years Superintendent of the Central State Hospital of Petersburg, became his assistant at Hillcrest Sanitarium. That private sanitarium would doubtless be continuing its good work today had not Dr. Barringer been called, perhaps about 1907, to the presidency of the Virginia Polytechnic Institute. There he remained until about 1912. During the first World War he lent himself to the government, but he had made his home again at the University of Virginia, and there he remained, until the Boatman came for him.

Have you inferred from his manner of life the degree of his versatility? His mind ranged and roamed throughout the universe in search of the varied knowledge that would satisfy his innate yearning to know. He was constantly sending his soul into the invisible, that is true. He was interested in the earth and in what grows out of it; but most of all, in his fellow-mortals, who lives upon the spheroid terra—in his origin, in his behaviour, in

his aspirations, and in his destiny. The roll of the years did not enroll him amongst the decrepits: he remained forever young, and his spirit dwelt always amongst the young and their unfolding minds.

At first he taught in a school of medicine, but soon he was the administrative officer of a great University; his developing interest in psychiatry, before the term had come into use, was interrupted by his call to the presidency of Virginia's great school of technology, and in that function he was entirely at home, because he was unceasingly insistent that the youth of the South have opportunities for scientific training. For several years he was a member of the State Board of Agriculture. He was enormously interested in the lives of those who till the soil, and he laboured to make their lives more abundant. He was also a member of the State Board of Health—a field of peculiar usefulness for his wide knowledge of medicine. He was once president of the State Medical Society. He wrote not a little—about cholera and syphilis and typhoid fever; and much about his study of the Negro, in whose destiny he was profoundly interested. He spoke, publicly, not often, but well always. He manifested his inner self most appealingly in intimate conversation with a friend or two, or with a small group. He loved his fellowman, and he was much beloved by those who knew him well. He was a loyal, a stimulating and an inspiring friend, who had brought by inheritance and by inculcation all that was best of the ante-bellum South into the raucous and self-assertive new day. But he did not repine, he did not express any yearning for the dear old dead days; his heart was in the present and in the unfolding future, in the vestibule of which he was always standing, waiting eagerly for the door to be opened.

His kind is gone, not to be again. He knew his fellowman and his student. The college student who occupied no place in "old Paul B's" charitable esteem did not belong in college life. And the boys knew that in his they had a firm friend to whom they could come about all their digressive conduct—whether they had stepped over the boundary line, or whether the fault lay in failure to measure up. The relationship existing between him and his students was highly personal—a spiritual state—that is disappearing from all school life, to the impoverishment of the student and the teacher.

North Carolina birthed him and afforded him his first habitation. But Virginia later nourished him and inspired him and was stimulated and succoured by him. Both states may exult in their pride in him.

The wife of the many years and their children

are comforted by sweet memories of happy days with him and by the satisfying realization that in them and in hundreds of former students living all 'round the earth the spirit of "Paul B." will abide as a noble influence forever and forever—for the good teacher becomes always one of the world's immortals.

OBSTETRICS

IVAN MARRIOTT PROCTER, M.D., F.A.C.S., *Editor*

MATERNAL MORTALITY IN SOUTHERN STATES

An article recently published¹ is of such importance as to warrant abstraction in this department.

For ten years, maternal mortality rates have gone progressively downward. Among the factors responsible are: economic status of the mother; educational environment; adequate prenatal care; availability of well-staffed and organized hospitals; race of the mother; public health nursing, and the ability to obtain the services of medical attendants with obstetric training. The greatest number of deaths from puerperal causes occur in the Southern States. In the United States, in 1938, there were 2,286,962 live births recorded, and 9,953 maternal deaths. The maternal mortality for 1938 was 53.5 per 10,000 live births. However, in the South, comparing the mortality rates of 1936-1937 with those of 1934-1935, there has been no significant decrease in maternal mortality rates, except in North Carolina, Florida and Texas.

The fundamental difference between the high southern and lower northern rates is a matter of obstetric care. In the South a great number of women do not have adequate care during pregnancy and labor. We have a large Negro population; there is great lack of maternity care at the hands of physicians and there are too few planned hospital confinements.

In 1938, more than 233,000 of the 267,700 Negro live births were in the South: Mississippi 29,505; Georgia 25,723; North Carolina 24,665; Alabama 23,207; South Carolina 20,754 and Louisiana 20,070. There were 262,462 Negro births in the United States in 1937. Midwives delivered 54 per cent of these. Of the 46 per cent of Negro births attended by physicians, 19 per cent were in hospitals and 27 per cent in the homes. In Mississippi, South Carolina and Georgia, midwives delivered 83.9, 82.4 and 75.8 per cent of the Negro babies, respectively. Figures on the amount and type of prenatal care received by Negro mothers are not available. Practically none of those attended by midwives and only a few of those at-

tended by physicians could have been expected to have received more than care at the actual time of delivery. The latest figures for 1938 reveal that, in 29 states with 500 or more Negro live births, the white and Negro maternal mortality rates were 38 and 86 per 10,000 live births, respectively—the rate among Negroes more than double that of white women.

The advantages of prenatal and delivery care by physicians, those able and willing to render it, are self-evident. The records of well organized obstetric clinics reveal that it is possible to obtain excellent results in prenatal and natal work. Unfortunately, in rural districts of the South such do not exist. However, the best of prenatal care, no matter how carefully and intelligently administered, cannot offset the results of faulty judgment or poor technic at the time of delivery. Physicians delivered approximately 90 per cent of the 2,203,337 babies born in the United States in 1937, half of these in the homes. Midwives delivered the remaining 10 per cent in the homes. Of the 1,928,437 white births, midwives delivered 4.5 per cent; of the 262,462 Negro births, midwives attended 55 per cent. Taking for granted that the average doctor is adequately prepared to render maternity services, there is a scarcity of physicians in rural areas and small towns. The midwife, limited in experience, intelligence and training, falls heir to the burden of an immense rural maternity practice.

In 1937 47.3 per cent of white deliveries and 19.8 per cent of Negro were in the hospitals. In Northern States hospital confinements were half of the total—from a low of 37 per cent in Maine to a high of 82.7 per cent in Connecticut. In Southern States the incidence of hospital confinement was 12 per cent.

The number of maternal deaths in the United States in 1938 was nearly 10,000. Of the 1,163 in three Southern States, sepsis was the cause of 29.3, toxemia of pregnancy 31.2, hemorrhage 19.7 per cent. Infection caused fewer deaths while toxemia and hemorrhage each caused 6 per cent more deaths in Southern States than in the Nation as a whole. The maternal mortality rate among Negroes (86 per 10,000 live births) during 1938 was more than double that for white women. The mortality rate from sepsis was higher among Negroes than among whites. The deaths from toxemia in Negroes more than doubled the figures in white women and the deaths from hemorrhage are more frequent among Negro than white women. The brunt of the battle for the control of the cause of maternal mortality rests upon the shoulders of the physician in attendance.

Deaths from sepsis are largely preventable, provided all the ordinary precautions are exercised in every confinement. Rectal examinations, rather than repeated vaginal investigations through an unprepared introitus, will materially reduce the number of infections. Surgical cleanliness in preparation for delivery is of paramount importance.

In the United States as a whole sepsis leads as the cause of maternal deaths. In the South toxemia leads. There has been no significant change in the number of women dying as a result of toxemia in the United States during the last five years. It is the only serious complication which is not showing a reduction. Adequate prenatal observation and intelligent interpretation of developing signs and symptoms will prevent the final eclamptic state of toxemia of pregnancy. The high incidence of eclampsia in the South is due to the large percentage of pregnant women (60-75 per cent in rural districts) who do not receive prenatal care. The symptoms and signs of toxemia are usually present early. The problem is the failure on our part to interpret the symptoms and signs and to apply successful treatment. Conservatism in the management of labor is the keynote of the modern treatment of toxemia. The medical induction of labor or induction by simple rupture of the membranes is the accepted method. The abandonment of traumatizing methods and the adoption of the modern method of controlling toxemia of pregnancy, especially eclampsia, before attempting delivery would materially reduce our death rate.

In 1938, 13.3 per cent of all maternal mortalities were due to hemorrhage. Prompt recognition of the cause and immediate active treatment will reduce these deaths. In the presence of active bleeding, whatever the cause, the attendant must not procrastinate. Placenta praevia has always been one of the bugbears of obstetrics. Hospitalization is required by all means. Vaginal examinations are contraindicated, unless we are thoroughly prepared to carry out treatment immediately. The first sudden, causeless and painless hemorrhage justifies immediate hospitalization. In planning treatment for premature separation of the placenta it is important to keep in mind the cause—toxemia—as well as the control of bleeding. Adequate prenatal care will prevent this condition in the majority of cases—a fact to be kept in mind while following a course of watchful expectancy during the treatment of the toxemia of late pregnancy. In postpartum hemorrhage preventive measures are of most value. Slow emptying of the uterus and judicious use of oxytocics will prevent many

cases of postpartum hemorrhage. An intravenous dose of pitocin will prevent the necessity of uterine packing in the majority of cases due to atony. Preventive treatment of hemorrhage by proper conduct of labor, intelligent use of oxytocics and avoidance of operative procedures through an incompletely dilated cervix should be our practice.

It has been shown that a high percentage of women who do register with a physician receive inadequate or poor prenatal care. There can be no excuse for this. The fault lies in poor training or failure to keep up with medical progress in the physician. Postgraduate education, in the form of refresher courses, lectures and postgraduate study, is the solution of our part of the problem.

TUBERCULOSIS

J. DONNELLY, M.D., *Editor*, Charlotte, N. C.

TUBERCULO-ASEPSIS

A new term is suggested¹ to designate a terminal result in many cases of tuberculous disease. One frequently sees patients, particularly among the elderly, with all the symptoms of active tuberculous disease but in whose sputum there is never a tubercle bacillus. Some of these cases have never been diagnosed as tuberculous, while others have had such a diagnosis and have spat up tubercle bacilli at various periods in their lives. The x-ray films usually show calcification and fibrosis, with pulmonary contraction, and evidence of varying degrees of emphysema. The belief is expressed that tuberculosis going on to asepsis places this disease on a basis similar to that of other infectious diseases, and that this process is the rule rather than the exception.

Several case histories are introduced to illustrate the condition. Following are short synopses of two of these histories.

Case 1: White man, born 1856 and died in 1937. No family history of tuberculosis and no known contact. He had "inflammation of lungs" in 1864, pneumonia in 1888, cough since 1875. Pulmonary hemorrhages in 1915, 1919 and 1920, last one a month before admission to Sanatorium November 12th, 1920. Patient dated present illness from 1918 with loss of weight, fatigue, dyspnea, cough and sputum frequently positive for the bacilli. Patient remained in sanatorium until June 12th, 1923, and remained in fair health until second admission seven years later.

Complaints on second admission in 1930 were dyspnea and chest pain. Patient had had eight-

1. J. M. McMillan, *Am. Rev. of Tub.*

once pulmonary hemorrhage in October, 1927, followed by two smaller ones a week later. 88 consecutive sputum examinations, including a concentration and two guinea pig tests, were negative for tubercle bacilli. The course of his disease in the sanatorium was more like that of cardiac than pulmonary disease and he died a cardiac death in 1937. From the autopsy report the pathological diagnosis was bronchiectasis with cavitation at apices of lungs; chronic fibrosis; pleuritis with marked calcification of pleura on the right; pulmonary edema; focal pulmonary fibrosis; and chronic mitral endocarditis. No microscopic evidence of tuberculosis anywhere in lungs.

Case II: White man born 1907 and died 1939. His contact was with an uncle who died of tuberculosis in 1926 or 1927. He had a mild bronchitis in 1927, influenza in 1929, and a mild bronchial catarrh for the past nine years. He gave the onset of his present illness as September, 1930, with a severe pulmonary hemorrhage, and a diagnosis of moderately advanced pulmonary tuberculosis was made at that time. His sputum was positive for tubercle bacilli on several different examinations. Patient was in a tuberculosis sanatorium from October, 1930, to August, 1933. After a right phrenicectomy in December, 1930, his sputum remained negative for tubercle bacilli. After another pulmonary hemorrhage in July, 1932, artificial pneumothorax was induced and continued until August, 1939. Increasing dyspnea in the summer of 1939 led his physician to advise a cardiac study. He was admitted to a general hospital December 30th, 1939, and died suddenly within 24 hours from what was diagnosed acute cardiac dilatation.

The pathological diagnosis was: post-inflammatory fibrosis of the lungs; hypertrophy and dilatation of the right heart; pronounced atherosclerosis of the pulmonary artery and its branches. Microscopic examination showed no evidence of tuberculous granuloma, and no areas of healed or calcified tuberculosis. No evidence at all of tuberculous reaction was found.

These case reports serve to illustrate the eventual possibilities of pathological change in certain cases whose original disease was known to be tuberculous. They are almost invariably permanently labeled as tuberculous, and are repeatedly admitted to sanatoria, although they derive very little if any benefit from such treatment. Fortunately for their contacts, these patients, having become negative for tuberculosis, are no longer capable of transmitting the disease, but it is necessary to be certain that they are aseptic. As a rule emphysema, bronchiectasis, fibrosis and calcification are the x-ray evidences of pulmonary disease, but the

possibility of tuberculosis being the original causative factor should be thoroughly investigated. For this reason, admission to a hospital where such a thorough examination can be more readily completed is advisable. The following is the author's routine procedure: (1) a detailed history, particularly as to lung abscess, pneumonia or any suppurative pulmonary process; (2) study of all past and present roentgenograms; (3) oblique roentgenograms for the purpose of studying the tracheo-bronchial areas; (4) tuberculin tests and frequently repeated sputum examinations for tubercle bacilli or other bacterial agents; (5) complete cardiac and blood studies. Although little can be done in the way of satisfactory treatment for these patients, it is important to find out whether or not their cases are aseptic. Prevention of infection is the most important phase of tuberculosis work. According to the author the most frequent symptom in this type of case is pulmonary hemorrhage in an apparently well individual, frequently following some acute respiratory infection. Chronic cough and sputum of many years' duration may be present, but, as the author states, such symptoms are frequently denied, even though the films show extensive pulmonary damage.

Death in this type of case probably most frequently is due to the overloading of the right heart with resulting cardiac dilatation. Since the condition is non-infectious from a tuberculosis viewpoint, long periods of hospitalization in a tuberculosis sanatorium are not necessary, although rest will relieve somewhat the cardiac load and prolong life. If the necessity for hospitalization becomes immediate, they can be cared for in general hospitals, with no danger of infection to the hospital personnel. The unfortunate phase of the condition is that it usually produces a state of chronic invalidism, and the victims, because of chronic cough and dyspnea, are unable to follow any lucrative occupation for any reasonable length of time.

INJECTION OF PILES WITH PSYLLIATE

(T. F. Reuther & C. O. Almqvist, Gary, Ind., in *Ill. Med. J.*, Jan.)

The use of 5% sodium psylliate solution is reported in a series of 50 patients.

The patients were selected as suitable for injection treatment, or were treated to control bleeding while awaiting operation.

The control of bleeding was more prompt and effective with injections of sodium psylliate than with phenol or quinine and urea hydrochloride solutions.

The amount of fibrous tissue produced was satisfactory. Fewer injections were necessary to produce a clinical cure than with the other solutions used.

Reactions which occurred were chiefly those of local pain following injections. There were two general reactions noted, neither of which proved to be severe.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

INDICATIONS FOR TONSILLECTOMY

THE indications for tonsillectomy have been debated for the past ten years. It is easy enough to understand why this issue is so controversial when one considers that the physiology both normal and pathological of the tonsil is only recently being well studied and understood. Even the fundamental, basic facts concerning the tonsil have been disputed. It is not wholly agreed upon whether the tonsils play a role in combatting infections around the throat and posterior pharynx.

At the present time the pendulum is swinging away from indiscriminate tonsillectomies. Physicians are looking into the results of the past ten to twenty years of such practice. The statistics thus obtained are revealing.

Kaiser wrote on the results of his thorough investigation of this problem and his conclusions follow.

1. The value of removal of the tonsils and adenoids cannot be definitely established in a few years. Apparent benefits during the first few years are not so evident over a ten-year period.

2. Benefits are apparent in rendering individuals less susceptible to diphtheria and scarlet fever.

3. Acute head colds and otitis media, though lessened over a three-year period, are not essentially influenced over a ten-year period.

4. Cervical adenitis is decidedly reduced in tonsillectomized children over a ten-year period.

5. Respiratory infections occur more frequently in tonsillectomized children.

6. First attacks of rheumatic infections occur about 30% less often after a tonsillectomy. Tonsillectomy has no effect on recurrences.

7. Incomplete tonsillectomies do not offer the same protection.

8. The hazards of tonsillectomy must be considered in the evaluation of the problem.

These conclusions seem to have an important bearing on the problem of whether and when to remove tonsils, but it is evident that there is some confusion here. For example, it would seem advisable to remove tonsils and to remove them early to lower the incidence of rheumatic fever, scarlet fever, diphtheria and cervical adenitis. Conversely, the tonsillectomy makes one more liable to pneumonia, bronchitis and laryngitis. It is believed that the solution lies in not removing tonsils until the fifth year or later.

The size of the tonsils means nothing, unless

actually causing respiratory or swallowing difficulties. Tonsils almost meeting in the midline, may be entirely free from infection and very probably have hypertrophied to combat infections in that region. Conversely, small tonsils may be the seat of gross infection and should without doubt be removed.

Probably the most definite of all indications for tonsillectomy is recurrent, chronic tonsillitis. In this condition there seems to be no doubt that the tonsil has lost its usefulness and is harboring organisms potentially dangerous locally and systemically. It is well to remember that this disease does not commonly produce sore throat in young children.

Chronic enlargement of the upper deep cervical lymphatic glands on either or both sides of the neck without enlargement of other glands indicates a tonsillar infection. Very often these glands are tuberculous and it is probable that the portal of entry was the tonsil. This, therefore, constitutes another very strong indication for tonsillectomy. The great decrease in incidence of tuberculous glands in the past thirty years may be due in part to the better treatment of throat conditions, and not entirely to the use of better milk and general hygienic measures.

Otitis media, with its sequelae, mastoiditis and deafness, are in the majority of instances the result of nasopharyngeal catarrh secondary to infected tonsils and adenoids. Tonsillectomy in these cases will often prove very beneficial. It has been the rule in rheumatic patients. The tonsils should be removed unless it can be definitely shown that no infection lurks within. There seems to be definite improvement after tonsillectomy in cases of chronic sepsis in children; although malnutrition, weakness and constitutional inferiority probably lowers the resistance to organisms which under better conditions would be unable to produce disease. Tonsillectomy for those who have recurrent colds is very questionable, except for those whose colds always started with a sore throat.

With well-meaning social workers, school teachers, public health examiners *et al* referring children for tonsillectomy because of every symptom conceivable, there is no doubt that many healthy tonsils have been removed. However, let us not err in the opposite direction by denying the benefits of properly executed tonsillectomy when indicated. Medicine is making great strides in chemo-, electro- and other forms of therapy, but concerning the tonsil nothing takes the place of good surgery when indicated. Whether or not to remove the tonsils should be carefully determined in the individual case.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

THE MEDICAL QUOTIENT IN REFRACTION

THE ignorance of the layman in regard to his visual problems, in regard to who are and who are not medical refractionists, and his trust placed in the capabilities of the "doctor" to whom he applies for help in that particular makes him the recipient of whatever brand of "medical practice" is imposed. Upon the "doctor" to whom he applies is imposed the duty and responsibility to use all the ability he has, and all the means he can enlist to aid in determining a diagnosis and in prescribing the proper treatment.

In a refractive error, great or small, it is not enough to summarily prescribe a corrective lens for that error and conclude the case. Such a method leaves out the medical problem which is part and parcel of every patient presented for refraction. It is conservative to say that 40 to 50 per cent of all children of pre-school and school age, representing all phases of economic life, who are presented for refraction or for an investigation of this problem, have no refractive error of consequence; that their eye symptoms are dependent upon dietary deficiency, allergic conditions, physical depletion from whatever cause, nervous debility, and psychic disturbances. The busy-every-minute schedule of our institutions of learning and the keen competitive spirit in all walks of life impose too great a burden upon the formative period of childhood and adolescence with the result that eye symptoms—headache, pain in the eye-balls, irritated lids, light discomfort, loss of eye muscle tone as witnessed by deficient convergence and lessened accommodation, digestive disturbances and emotional trends, simply reflect the physical and nervous status of the individual. Then the bugaboo "eye strain" with all its implications and fixed viewpoint of the individual and his well-meaning advisers that glasses should cure all of his ills. Then, if without a basic reason glasses are prescribed, they are a further imposition upon the child because of their handicap, an economic waste to his sponsors. Thus are the standards of ophthalmological practice lowered, the patient diverted to those not best qualified.

Eye strain is a misnomer. It is improbable that an eye can be strained. It can become fatigued by excessive use to the point where the individual can no longer accomplish his work because of blurring of vision, pain in the eyes and head and a sensation of burning of the lids. This can occur

with or without a refractive error and is predicated upon any eye anomaly, general physical or nervous depletion or adverse external factors. The intrinsic and extrinsic muscles of the eye in a normal eye in a normal healthy individual are so geared in unison that eye strain (fatigue) is never experienced except under the prolonged effect of the most adverse external conditions.

Vision is an involuntary function of the eye. An attempt to increase visual capacity beyond the ability of any eyes to see causes fatigue of more or less degree, but there has been no strain placed upon the intrinsic and extrinsic muscles. Strain of a muscle or a group of muscles, as in the eye, implies impairment or injury to the tensile strength of the muscle or tendon by overstretching causing a mechanical deformation in its structure. It is hardly conceivable that this can happen in a normally coördinating eye musculature. The refractionist should thoroughly investigate the medical possibilities in every case presented, especially in children, and should not rely upon the prescription of glasses as a routine measure either in the presence of small or large errors of refraction.

In children, and in adults prior to the age of presbyopic changes, for a simple spherical error of refraction of one diopter or less or an astigmatic error alone of less than $\frac{1}{2}$ diopter glasses should better not be prescribed in the great majority of cases. Instead, if symptoms of eye discomfort are present a careful investigation into the daily habits of the patient, and proper advice and medical treatment would solve the eye problem with a great deal more satisfaction to the patient and less strain upon his finances.

In the attempt to rehabilitate the indigent patient, to prescribe for correction of the amount of refractive error specified is an economic waste, because it does not rehabilitate, to prescribe glasses where one eye is normal or comes within the specifications above named and the fellow eye grossly deficient in vision, or otherwise defective. This reasoning is obvious and applies as well to those economically secure.

In the frank presbyope, the aged and infirm whether indigent or otherwise, the vocation, the economic and social status of the individual should be a strong directing influence in the prescribing of corrective glasses as to whether or not a straight reading glass is need or bifocals. The weight of evidence is in favor of the simplest type of correction which meets the need of the individual case. Here, too, a thorough knowledge of the medical aspects of the case, as well as the special problems presented in each eye, is essential in directing the treatment to be prescribed.

It is estimated that 85 per cent of all children of school and pre-school age have some defect of the visual apparatus. The great majority of these defects are of little importance per se, they cause no economic loss, and require no special treatment except that which may be necessary for the general wellbeing of the individual that lowered physical vitality may not be reflected in the eyes augmenting the defects present. In other words a normal healthy body will compensate for the great majority of these deficiencies holding in abeyance what otherwise might become a detrimental factor in visual efficiency.

NONSPECIFIC PROTEIN THERAPY IN OCULAR DISEASE

(T. E. Sanders, St. Louis, in *Jl. Iowa State Med. Soc. Feb.*)

A typhoid vaccine in vials of 2.5 c.c., each c.c. containing 1,000 million organisms is used. With a tuberculin syringe, doses as small as 50 million of this preparation can easily be given without dilution. In smaller doses it is well to dilute with saline.

One of the chief problems of foreign protein therapy has been the lack of an agent that would give a satisfactory reaction, yet could still be used safely in office and clinic. Such a substance is now available in Typhoid Antigen H. After intravenous injection, typhoid antigen H causes a prompt rise in temperature, but there is usually no chill and the patient does not feel as debilitated as after typhoid vaccine. Dosage and method of administration are the same as for typhoid vaccine, although a slightly larger dose may be used.

Foreign protein therapy is very effective in ocular inflammation, particularly of iridocyclitis and ocular trauma; it is easy to use and not dangerous, large enough doses should be given to cause definite general reactions; typhoid vaccine is the most effective agent, although typhoid antigen H is effective and offers advantages in office practice.

(This is a valuable, but neglected, treatment in sluggish disease conditions of organs and parts other than the eye.—*J. M. N.*)

GENERAL PRACTICE

WALTER J. LACKEY, M.D., *Editor*, Fallston, N. C.

DIAGNOSIS AND TREATMENT OF PAROXYSMAL TACHYCARDIA IN GENERAL PRACTICE

Paroxysmal tachycardia in most cases is benign. The predominant sign is heart rate of 150 to 220 per minute.

Sinus tachycardia rarely goes higher than 130 per minute, increases during physical exercise.

Auricular flutter rate higher—200 to 400 per minute—although a partial block can be deceptive. Exercise never changes the rate in paroxysmal tachycardia while in case of flutter it often temporarily retards the ventricular rate to one-half or one-third. In paroxysmal tachycardia the carotid arteries are visibly pulsating; seldom seen in auri-

cular flutter. There is strict rhythmicity in paroxysmal tachycardia and absolute arrhythmia in auricular fibrillation. In cases of auricular fibrillation the carotid arteries show only a very slight pulsation, if any, and that always irregular.

Assure the patient that he is not suffering from a severe heart ailment, ask him for his cooperation. Apply carotid sinus pressure, never on both sides simultaneously. With the three middle fingers palpate the rt. carotid artery, the middle finger being at the height of the angle of the jaw, press the artery suddenly and strongly against the vertebrae for 5 to 10 seconds; if not successful, try on the other side. If not successful, next use eye pressure—painful, but can do no harm. The patient flat, eyes closed, ask him to look downward, let him hold stethoscope on his chest. With our palms on his head in the temporal region apply a slowly increasing pressure with our thumbs on his eyeballs; sometimes a stronger pressure is necessary. We need not be afraid of injuring his eyes. Many times when carotid sinus pressure fails, eye pressure will stop the attack. The strangest case we saw was a patient who claimed to stop his attacks only by going into a doorway and turning a somersault.

The attack not ended by pressure, morphine sometimes relieves, harmless 1/8th to 3/8th grains.

The remedy of choice in stopping as well as in preventing the attacks is quinidine. After a trial dose of 0.2 gm. to exclude an allergy against derivatives of quinine, we start 2 hours later with doses of 0.4 to 0.6 gm., every 2 to 3 hours until the attack has subsided. Keep in bed and use cold application on the precordium. A few long-lasting cases have responded to digitalis intravenously (2 to 4 c. c. once to twice a day).

In a limited number of cases we must be careful lest the management of the tachycardia interfere with the treatment of another pathologic condition of the heart—:

1. Mitral stenosis with auricular fibrillation. In this case we are careful in prescribing quinidine because the slower normal rhythm may bring about a loosening of thrombi in the auricles. Small doses of quinidine should be combined with digitalis, after the two mechanical treatments are tried unsuccessfully.

2. Coronary occlusion. Quinidine weakens the heart already impaired by the infarction. Morphine is especially useful since the attacks of tachycardia are usually of short duration when due to coronary occlusion.

3. Marked hypertension. Combine not too large doses of quinidine with barbitol or chloral hydrate in the usual doses. Commonly the attacks can be stopped by carotid sinus pressure. The preventive

dose of 0.2 gm. of quinidine 4 i. d. should not be increased.

Paroxysmal tachycardia diagnosis and differential diagnosis can be made without the electrocardiograph. The treatment of the attacks consist of the carotid sinus pressure, the eye pressure and administration of quinidine; these methods should be tried in the order named.

A helpful article¹ on a common and distressing condition tells us how to diagnose and treat at the bedside.

1. Otto Neurath, Sigourney, in *JI Iowa State Med. Soc.*, Dec.

DENTISTRY

J. H. GUNION, D. D. S., *Editor*, Charlotte, N. C.

NEW PLAN OF DENTAL EDUCATION

HARVARD will inaugurate in 1941 an entirely new five-year course in dental education¹. The course, which will combine the basic knowledge of both medicine and dentistry, is designed to train new types of scientific workers for the attack on dental disease. The new development has been made possible by the gift of \$650,000 from the Carnegie Corporation, \$400,000 from the Rockefeller Foundation, and \$250,000 from the John and Mary R. Markle Foundation. A balance of \$250,000, bringing the total of \$1,550,000, is required to fulfil the program. The President and Fellows of Harvard College have also transferred to the resources of the Harvard school of dental medicine \$1,000,000 tentatively placed at the disposal of the dental school ten years ago. The dental school will be renamed the Harvard School of Dental Medicine.

Dental students will register in both the School of Dental Medicine and in the Harvard Medical School, taking three and one-half years of the same medical courses as other students in the Harvard Medical School, and in addition one and one-half years of specific dental training. Graduates will receive both the M. D. and D. M. D. degrees. Admissions to the school of dental medicine will be governed by the same standards and the same committee which governs admissions to the Harvard Medical School. The last class to enter the present four-year dental curriculum at Harvard was admitted in September 1940, and the new program will go into operation in the autumn of 1941. Harvard, the first university in America to establish a dental school, thus becomes the first university to institute this particular plan in the development of dental and medical education.

The plan being put in force at Harvard seems

to have as its purpose the training of men for public health work, teaching and scientific work. It will be fine for that purpose but at the present the general opinion seems to be that too much time and expense are involved for the man who is going to do general practice of dentistry.

1. *The Diplomat*, Oct.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

CANCER OF THE THYROID

THE tendency of adenoma of the thyroid or nodular goiter to become malignant, if not surgically removed, is of especial interest in the South-eastern States where adenoma is the prevailing type of thyroid disease. It is estimated that from 80 to 90 per cent of all cases of cancer of the thyroid develop from benign nodular goiter and Means, in his monograph on the thyroid, says that carcinoma has been proven to be present in 3.2 per cent of clinically nodular goiters. In Berne, Switzerland, where there is a high incidence of thyroid disease, cancer of the thyroid was found in one of every 96 post mortem examinations, whereas in the United States it is noted once in every 928 post mortems.

Unfortunately, early malignancy in benign adenoma cannot be recognized clinically. Rapid increase in the rate of growth is suggestive but sudden enlargement may be caused by hemorrhage into the tumor. Palpable change of consistency of the growth, increasing hardness, is significant but not conclusive. Pressure symptoms may embarrass respiration and alter the voice. Metastatic involvement of the cervical lymph glands is a late manifestation. The basal metabolic rate is of no value in determining malignancy. Most often characteristic clinical changes occur only after the confining capsule has ruptured and the surrounding gland becomes infiltrated by cancer.

Treatment of cancer of the thyroid is most effective before the condition can be recognized clinically. Although malignancy may undoubtedly begin as a primary disease in an apparently normal gland, as a rule it develops in glands that are obviously diseased. It behooves the clinician to have adenomatous masses removed from the thyroid as soon as they are recognized. Simple removal of the encapsulated growth is all that is necessary. Wide excision need not be done. After infiltration of the gland has begun the affected lobe and the isthmus should be removed completely.

When the juglar vein has been invaded by cancer it should also be removed. Cases in which the

growth is fixed to the trachea, and there are no lines of cleavage to guide dissection, should be considered inoperable. In them palliative tracheotomy may prolong life.

In every case of malignant tumor a biopsy examination should be made to learn the radio-sensitivity of the growth. This affects the prognosis and is helpful to the radiologist in determining the method of application and the proper dosage. Every case of cancer of the thyroid should have radiation after operation. In inoperable cases radiation holds promise of prolonging life by lessening the activity of the tumor, and, by removing the incubus of the growth and in other ways, making the afflicted one much easier for his remaining time.

Metastases should be treated by radiation.

PEMBERTON: Diseases of the Thyroid Gland. *Christophers Text Book of Surgery*, Edition 1936.

LAHEY: Carcinoma of the Thyroid. *Annals of Surgery*, Dec., 1940.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

GONORRHEA IN THE MALE

REPORTS on the new "cures" for gonorrhea were first so encouraging and of late have been so conflicting as to make gladly welcome a statement on which we may rely. Such a report¹ is here abstracted. It is comforting and reassuring.

Sulfanilamide does one of three things: 1) It either produces a cure within two weeks; 2) it eradicates the obvious signs of the disease and leaves the patient as an asymptomatic gonococcus carrier, or 3) it does not in any way change the course of his disease.

How many does it cure? One has to be generous to say 30%, which is far from those romantic figures of from 60 to 91%.

How many asymptomatic carriers does it make? 20% or much higher.

Some sulfanilamide failures may be cured by some of our later sulfonamides and those who are not should be treated as before these drugs came into use.

How about those who become asymptomatic carriers? A virile male who falsely believes himself cured is a social menace. He may go months without symptoms, despite alcohol and sexual intercourse which, in the presulfonamide days seldom left him in much doubt as to cure. When he transmits his infection to a female, she usually,

becomes a totally asymptomatic carrier who has not the slightest suspicion that she has such an infection until she transmits it to a third party. He has a profuse urethral discharge containing countless gonococci. *This third party usually responds promptly to sulfanilamide medication.* He has an equal chance with the party of the first part of becoming an asymptomatic carrier.

Thus could the shaking-down process be continued.

The point reached by the essayist and many of his friends is that sulfanilamide should be abandoned for the far more efficient sulfapyridine and sulfathiazole, or whatever the future may develop that may be improvements upon them. They, too, produce some asymptomatic gonococcus carriers who can produce others of the same stripe. Patients return whom we were sure were cured by both drugs some months before; these had been subjected to all of our so-called tests of cure, their secretions repeatedly subjected to the most careful microscopic and cultural studies.

So far our story has been gloomy, it is time to get out into the sunshine, for there is much of it. A number of careful clinicians report *apparent* cure rate of both sulfapyridine and sulfathiazole runs between 80 and 91%; there is little to suggest that the carrier rate among *these* apparently cured patients is high. Even if as high as 10%, we must view the introduction of these drugs into the treatment of gonorrhea as the most glorious thing that has ever happened for its victims.

Except perhaps in metastatic gonorrhea, large doses are not needed.

If the patient is not symptom-free by the end of 5 days, further administration of the same sulfonamide is useless.

Change to another may produce results. This is particularly so where sulfanilamide has failed.

Sulfanilamide, where the others have failed, is useless.

Continuation of the same drug for longer than 10 days is of no value.

The cure rates of sulfapyridine and sulfathiazole are about the same for both early and late cases.

The toxic by-effects of sulfapyridine are, dose for dose, about equal to those of sulfanilamide. For sulfathiazole they are far less.

As many of these toxic symptoms appear after the first week of medication, some doctors continue the drugs for only 7 days. The cures are no less than for 10 days or more.

In the presence of any toxic symptoms of moment, these drugs should be stopped and the patient instructed to drink large quantities of water to aid elimination.

Short dosage period and a fluid intake of at least 1500

1. P. S. Pelouze, Univ. of Penn., in *Bul. N. Y. Acad. of Med.*, Jan.

c. c. in the 24 hours will prevent sulfonamide urinary calculus.

Patients seemingly cured have no urethral discharge. Prostatic and Cowper's gland secretions offer the only means of revealing carrier states microscopically.

Properly-dose cultures of carefully collected secretions have twice the diagnostic value of the most careful microscopic studies. Both can fail to reveal persisting infection and should be repeated two or more times.

No patient should be dismissed from observation in less than two months during which at least three cultural studies have been made.

Under even the best of circumstances it is best to insist that the patient employ rubber sheaths in his sexual pursuits for three months after supposed cure.

At least 30 % of all urethral discharges are non-gonorrheal and a microscopic diagnosis of gonorrhea should be made before any patient is started on sulfonamide drugs. They are practically useless in non-specific cases.

PYRETHRUM IN MEDICINE

Why would not the idea have occurred to every one of us to use pyrethrum against pestiferous insects other than flies and mosquitoes? The opportunity that presented itself to all has been improved by at least one¹.

Pyrethrum for killing insect pests has been used for years. It is harmless to warm-blooded animals, but extremely toxic to the cold-blooded.

The medical literature on pyrethrum is meager. However, those who have investigated its use have found its action spectacular, both as an anthelmintic and in the treatment of scabies.

A recent survey of prisoners committed to jail in the District of Columbia reveals that nearly 7% of those admitted suffer from one or more forms of parasitic infestation, 2% from scabies.

The coöperation of Dr. Alfred Week and a manufacturer furnished a product containing 2% pyrethrins, called A-200 compound. This ointment is non-poisonous to man.

Almost as soon as this A-200 was applied the lice would die within a few moments. Even when spread lightly over infested areas the parasites that had burrowed into the skin would back out from their retreats and might be seen to convulse with paralysis. The eggs immediately became detached from the hairs; in more than 200 cases a single application has been sufficient to delouse the patient and there is not one instance of contact dermatitis or skin irritation to report.

A total of 1,213 cases of scabies treated by others with .75% pyrethrum oint., 878 requiring from 5 to 7 days, 283 requiring from 7 to 14 days to complete. In 52 cases they found it necessary to use Wilkinson's (sulfur) ointment, either on account of pustular involvement or poor coöperation. The pustular cases were not recommended by them

for treatment with pyrethrum ointment.

In more than 70 cases of scabies treated by the writer with A-200 compound, it has been determined that scrubbing and bathing are not essential to successful treatment, with no contraindications in pustular conditions. The most severe cases required no more than 3 applications of A-200 compound, and in most instances the lesions were found to heal after a single treatment.

THERAPY IN PNEUMONIA

(R. H. Major, Kansas City, in *Jl. Kansas Med. Soc.*, Dec.)

Sulfapyridine is antipyretic, bactericidal; fall of t. may coincide with its specific effect upon the infection.

Hematuria in the course of sulfapyridine therapy is caused by the formation of acetylsulfapyridine calculi in the renal tubules and pelvis. The drug should be discontinued. It has been suggested that the administration of sodium bicarbonate will alkalinize the urine and prevent the formation of calculi. This complication is relatively rare, and there is no positive proof that soda will prevent it.

The most annoying and most common complication of sulfapyridine therapy is nausea, often with vomiting and hiccoughing. The most effective drug for this complication, in our experience, is nicotinic acid, 50 to 100 mg. by mouth 3 or 4 times daily.

The nausea may make it impossible for the patient to take tablets of sulfapyridine by mouth. In such instances we employ 50 c.c. of a 5% solution of the sodium salt intravenously 2 to 3 i. d., and have also used 30% solutions intramuscularly in doses of 5 c.c. or more.

Sulfathiazole gives promise of being even more valuable than sulfapyridine. Extensive laboratory tests indicate that sulfathiazole is quite as effective as sulfapyridine against pneumococcus, meningococcus and hemolytic streptococcus, while it is more effective than sulfapyridine in staphylococcal infections.

Blake at New Haven has had 100 cases of pneumonia treated with sulfathiazole with a mortality of only 3%, these 3 elderly patients. It only rarely produces nausea and vomiting.

GARLIC THERAPY IN DISEASE OF THE DIGESTIVE TRACT

(E. E. MARCOVICI, New York, in *Med. Rec.*, Jan. 15th)

Two investigators found that the excretion of bile was markedly increased.

Beneficial effects obtained with garlic in nervous diarrhea, flatulence, distention are probably due to action similar to that of the simple stomachics and carminatives; increase of appetite frequently is observed.

A wider use of this harmless and effective drug available in the odorless and tasteless form of allistin is recommended.

THE TREATMENT OF OXYURIASIS

(J. S. D'Antoni & Willi Sawitz, New Orleans, in *Amer. Jl Trop. Med.*, via *Current Med. Dig.*, Nov.)

Drugs thought to be specific have not proved efficient, nor have purgatives or prophylactic measures.

Using gentian violet (medicinal) ½ gr. tab. with a coating supposed to dissolve in 4 hours in the cecal region. Medical treatment with gentian violet was shown to have an efficacy of 90%, given an hour before meals.

Vomiting occurred more often in females than in males, suggesting that a smaller dosage in girls be recommended.

In groups in institutions a single infected individual represents a probable source of reinfection.

1. W. K. Angevine, Washington, in *Med. Ann. of Med. D. C.*, Jan.

PEDIATRICS

G. W. KUTSCHER, JR., M. D., F. A. A. P., *Editor*
Asheville, N. C.

THE NEED FOR TYPING PNEUMONIAS

The sulfonamide drugs are bactericidal and bacteriostatic for pneumococci (regardless of type), for some varieties of streptococci and for some other organisms; but they are not equally effective against some organisms responsible for consolidation of the lung, so the etiology of a consolidation must be determined to prevent the administration of an often disagreeable and sometimes dangerous drug, and to permit the application of other available specific therapy where indicated.

To determine the cause of a consolidation may require repeated examinations of the sputum with inoculation of mice, an examination of the blood and of the urine for organisms and for their specific products of metabolism, and the blood and tissues for specific antibodies produced by the patient. It is preferable to examine the sputum for organisms before these drugs are administered, but the prior administration of the drug is no excuse for failure to examine the sputum should a favorable response not be made promptly. Pneumonias due to *B. Pertussis* are said not to be benefited by sulfonamide drugs, but pneumococci are responsible for the pulmonary consolidation in more than 10 per cent of patients suffering from pertussis.

A blood culture is to be made in every case of pneumonia because a bacteremia may exist and the etiology of the pneumonia may be thus determined. Pneumococci found in the sputum in the presence of a consolidation are responsible for the pneumonia in only 93 per cent of cases.

Pneumococci may become fast to sulfapyridine and this fastness may be retained by them after passage to another patient. Such sulfapyridine-fast pneumococci are susceptible to serum because it neutralizes their capsular substance and sensitizes them for phagocytosis.

Specific serum augments the action of sulfapyridine.

If antibody is already detectable in ample amount, it is useless to continue administration of the serum. In that case, the antibody may have been incomplete or unsuitable because of errors in typing or in the collection of the material, or there may be additional, different invaders. It may be wise then, to add chemotherapy while the patient is restudied. Even when there is an effective concentration of the drug in the blood, the temperature may continue to be elevated. In such

a case, the organisms may not have become fast to the drug; there may be ample immunity response, and the blood may have been made bactericidal for the incitant of the consolidation. The drug itself may be responsible for the fever and, if continued, may produce shock and death of the patient.

SULFAMETHYLTHIAZOLE AND SULFATHIAZOLE IN GONOCOCCAL INFECTIONS.

(J. F. MAHONEY et al., U. S. Pub. Health Service, in *Amer. J. Syphilis*, Sept.)

Report is made of experience with sulfamethylthiazole in the treatment of gonococcal infections in 115 men and 21 women. For all the men the dosage was 4 gm. on the first day in 4 doses. In 99 of the 115 men, then 2 gm. per day for 6 to 9 days. The remaining 16 were given 4 gm. per day for 2 to 6 days before being reduced to 2 gm. per day. In no case was the drug continued for more than 12 days. In women 3 gm. for one day, then 2 gm. per day for 6 to 11 days. Cures were obtained for 91 of the 115 men of whom 39 had previously failed to respond to one or more courses of sulfanilamide or allied sulfonamide, and only 21 of this number obtained cures with sulfamethylthiazole. None of the 21 women had received previous sulfonamide therapy. In 19 sulfamethylthiazole treatments was followed by cure.

With one exception, the complications responded rapidly. In this gonorrheal arthritis neither it nor the initial urethritis was affected by the treatment.

Of the total group of 136 patients 36 showed mild evidences of toxicity.

Sulfathiazole in the treatment of gonococcal infections: day, then 2 gm. per day for 5 to 11 days; in 34 patients. In 71 patients the dosage was 4 gm. per day the first the initial dose was 6 or 8 gm. during the first day, then 4 gm. per day to a maximum total of 10 days of medication. Of the 79 patients on which this report is based, 47 had received no previous treatment and 43 of these responded favorably. The 32 remaining patients had failed to benefit from sulfanilamide: 29 of the 32 were cured. There were 7 failures in this series. Larger doses did not appear to be more effective than the usually employed; i. e., 4 gm. for one day and 2 gm. for 6 to 9 days more. The duration of the obvious infection before starting sulfathiazole treatment did not appear to influence the therapeutic response.

SULFAPYRIDINE COMBATS FRIEDLANDER TYPE OF PNEUMONIA

(S. SOLOMON, New York, in *Jour. A. M. A.* for Nov. 2nd)

The first reported use of sulfapyridine for chronic pneumonia due to the Friedländer bacillus brought about the recovery of the four cases in which it was used.

The Friedländer bacillus, is rod-shaped and is responsible for from 1 to 3% of all adult cases of acute pneumonia. The incidence of the chronic type of Friedländer pneumonia is less than that of the acute type. No case has yet been observed in childhood.

He reports 27 chronic cases. Four of them were given sulfapyridine and one who was bacteremic was given sulfanilamide amide. All 5 recovered. Among the 12 patients, who were given other treatment there were 4 deaths.

CURRENTLY employed liver function tests leave much to be desired.—Morrison.

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LOOSE THINKING AS TO CAUSE

THE implications of the term cause are seldom fully grasped. Generally a cause is thought of as a single thing, a bacterium or a poison commonly. A cause, however, may be contributory, primary or secondary, immediate or ultimate. The discovery of an inciting cause of a disease is an exciting event but such a discovery represents merely the beginning of a parturition of a new chapter in science. In order to bring the child to full term, a host of contributory mechanisms must be uncovered, the invasive, immunological, pathogenetic, allergic, constitutional deficiency factors and so forth. For example, Laveran discovered the cause of malaria but it remained a sterile fact until Ross discovered the host in the mosquito. Hansen discovered the cause of leprosy a half-century ago, but the mechanism of invasion is still a mystery. There are only a few diseases of which we have the composite picture of etiology, so that our current lore concerning the cause of diseases represents mostly a series of variously developed embryos.

This subject is engagingly discussed in a book of 600 pages which is supplied as the current issue of the journal¹ of a great hospital.

The cause of disease it is pointed out must not be confused with the mechanism whereby the disease, like the embryo, attains its fruition. Hyperthyroidism and the resulting changes in the thyroid gland are the dominant mechanisms of Graves' disease, but the cause lies behind these mechanisms. The changes in the islands of Langerhans represent the mechanism of glycosuria but these changes are not the cause of diabetes.

One wonders whether distinction between cause and effect is not the most difficult accomplishment of human thought. The Dark Ages were dark because this accomplishment was clouded by dogma and tradition. Comets portended plagues, diseases were a dispensation of the Almighty, and scrofula was cured by the King's touch. It was not ignorance but a lack of mental discipline that led to these distortions. Effects are regarded as causes, and vice versa. Arteriosclerosis was regarded as one of the main causes of hypertension until Allbutt and others proved the reverse to be the rule. Achlorhydria was once held to be the result of pernicious anemia; we now know that it precedes by years the clinical evidences of pernicious anemia. Cause and effect are much confused.

"What constitutes a disease?" Moschocowitz pertinently asks. And he offers an answer: "a morbid process that has a consistent background

1. Eli Moschocowitz, New York City, in *Jt Mt. Sinai Hosp.*, Jan.-Feb.

in morbid anatomy;" adding, "but we are forced to classify certain symptom complexes, syndromes and functional disturbances as diseases."

"The problem of etiology must be concerned not with the discovery of a cause of a disease, but of the causes—of a how, and a when, and a why." In this sense, there is hardly a disease in which the complete etiology has been fully elaborated; and, on the other hand, there are few diseases in which at least part of the etiology is not well known. Even in cancer, our knowledge of some of the contributory factors is considerable.

A cause that has received little consideration until the last few years, but which furnishes vast opportunities for study, is the psyche. It is slowly dawning upon us that the impact of reiterated emotional influences upon a personability that is compounded largely of environmental and genetic influences can actually cause organic disease. An evidence of the new faith is a journal devoted to the psychosomatic diseases. The genesis of these maladies subsumes the proposition that function may sometimes precede anatomy instead of reversely.

The summation of our argument is this: that in the study of etiology, more particularly than in almost any other chapter of medicine, the most important attribute of our thought, as in stroking the ball in tennis or in golf, is the follow through.

The thoughtful article from which so much has been taken has immense practical bearing. The loose thinking and loose writing so characteristic of our time is manifested only a little less by medical men than by laymen. Within the past week a radio spieler introduced a young woman as of Norwegian ancestry, and so, well qualified to sing in that language. By the same token the late Vice President Curtis could have sung sweetly in the dialect of the Kaw Indians.

It is a stock statement regarding certain diseases that we can not hope to master them until we learn their causes; although all of us know we have had the mastery of smallpox in our hands for nearly 150 years, and still its cause remains a dark secret.

The essayist has sown good seed. It is to be hoped they will fall in good ground and bring forth fruit.

OUR KNOWLEDGE CONCERNING INFLUENZA

THE great difference of degree of severity in different epidemics has caused many to believe that what we call influenza is fore than one disease.

Recent investigations¹ bear this out.

In 1933 a virus pathogenic for ferrets was obtained from the throat washings of patients with influenza and it was proved that antibodies against this virus were produced during convalescence from the disease.

This virus has caused many epidemics of influenza in the last seven years; this virus has not caused all epidemics of the disease during the same period. No signs or symptoms have been established which would serve to distinguish cases of influenza of known cause from cases of influenza of unknown cause.

It is suggested that two primary divisions be made:

(1) Clinical Influenza — A symptom-complex characterized by sudden onset, fever, headache, chills, muscular pains and cough.

(2) Influenza A—A specific disease caused by infection with any strain of the virus discovered by Smith, Andrewes, and Laidlaw.

If hitherto undescribed viruses are isolated and shown to be causes other specific diseases in the group could be labeled influenza B, C and so on.

Influenza A cannot yet be diagnosed certainly at the bedside.

The recovery and identification of influenza A virus from a given throat washing cannot yet be accomplished in less than 3 weeks. Serologic diagnosis, under ideal conditions, requires from 10 days to 2 weeks after the beginning of an epidemic.

It has been found that a complex vaccine prepared from chick embryos infected simultaneously with both influenza A virus and canine distemper virus was effective in stimulating the production of additional antibodies against influenza A virus after a single subcutaneous injection in man. The efficacy of a possible prophylactic agent can be determined accurately only by the study of comparable vaccinated and control groups of human beings exposed to an epidemic of proven influenza A.

PREVENTION OF ABDOMINAL ADHESIONS

EXCEPTING the cases in which something as clearly demonstrable as a fibrous cord binding down and so obstructing passage through a portion of intestine, most of us are rather skeptical of a diagnosis of postoperative adhesions, and slow to advise operation for breaking down adhesions with a view to relieving the patient of miscellaneous abdominal discomforts.

That symptom-producing adhesions do form and that such formation should be prevented if possible all agree.

¹ F. L. Horsfall, Jr., New York, in *Dig. of Treatment*, Feb.

An Arkansas surgeon¹ has looked into the matter and written convincingly. His approach is experimental and clinical.

Substances which are now being rather widely instilled to prevent adhesion formation are papain, amniotic fluid and, to less extent, isotonic saline solution. Work with papain has convinced that it is of no value in preventing adhesions. The only case of postoperative obstruction which the essayist has had in private practice resulted following an appendectomy when the peritoneal cavity was full of amniotic fluid at the time of operation. He knows of no proof of amniotic fluid being of value in preventing adhesion formation. If the gut is unusually dry when it is placed back into the abdominal cavity, instillation of saline can do no harm and may be of some value.

Gonococci and staphylococci, we are reminded, are prolific fibrin producers, prone to produce permanent adhesions. Colon bacilli and streptococci are very poor fibrin producers. In a case of *pure* streptococcus or colon bacillus peritonitis the prognosis is practically hopeless since these toxins do not call forth sufficient fibrin to permit walling off the infection. Fortunately, however, such peritonitis is usually mixed also with staphylococcus infection, which produces much fibrin. The formation of adhesions in the peritoneal cavity is to an extent in inverse proportion to acuteness of the pyogenic infection. In other words, one may have a peritoneal cavity almost full of pus and yet have an amazingly small amount of permanent adhesion formation after subsidence of the infection. Wherever the serosal covering within the abdominal cavity is permitted to remain broken, adhesion formation is almost sure to occur. Of importance are drains, suture materials and packs.

Chemically irritating substances as urine, bile, gastric juices even though sterile produce adhesions, also chemicals in suture materials.

Whenever practicable an incision should be made parallel with lines of tension of the abdomen—parallel with the fibers of the internal oblique. To hold the bowel out of the field of the suture during closure, one of the most useful implements is the ordinary tablespoon, placed close against the under surface of the peritoneum, sewing in the bowl of the spoon. As the peritoneum is sutured use the thumb forceps to evert the edges as the suture line is drawn taut.

Contrary to popular belief sponging and packing if properly carried out do not appear to cause adhesions, but bacteria dragged in from the abdominal wall onto the surface of the gut may cause adhesions. Keep drapes arranged so that the skin

of the abdominal wall is entirely protected. In almost 100 per cent of the cases there is permanent adhesion where a knot is left exposed.

The following conclusions regarding suture materials seem warranted:

Plain catgut is about the poorest of all sutures, even in closure of the peritoneum. When catgut is used in the abdomen the finest chromicized, sufficiently strong to withstand the tension upon it, should be used—rarely indeed stronger than 00 for closing the peritoneum. The chemicals used to chromicize catgut are in themselves irritating, every manufacturer does not use the same methods. The Davis and Geck brand has been found uniformly strong and dependable.

The increased use of silk seems warranted, many use it throughout in all types of abdominal operations. In the course of a few months a fine untreated suture will have disappeared. Black silk (the 10c store kind) is excellent except that it will not stand repeated sterilization. Ordinary fine cotton thread is a good suture material for use in the peritoneal cavity.

Postoperative distention is an important factor in tearing the peritoneum along the suture line and thereby causing adhesions. Enemas are used too promiscuously postoperatively and preoperatively. We rarely give an enema, then a very small one to assist in removing what has accumulated in the rectum.

Dehydration of the bowel may predispose toward loops of gut sticking together and to adhesion formation. It is important to maintain a satisfactory fluid balance postoperatively.

The appendix stump is to be buried unless inaccessible, the serosa about the appendix base will not hold suture material well, or the operator be inexperienced. The author used the ligation-and-drop method for ten years before becoming convinced of the superiority of the inversion technique. Ordinary untreated black silk is used for the inversion suture, next preference being fine 00 or 000 chromic catgut, or linen. Warning is sounded against the use of present Deknatel silk for burying the stump since adhesions are more prone to form about this latter suture than any of the others mentioned.

A similar expression as to suture is made by another contributor² to the same issue.

Spool cotton has been used extensively, it produces less cellular reaction and earlier healing than catgut, silk or linen. When placed in tissues, cotton loses 10 per cent of its tensile strength in 14 days, while silk loses 35 and catgut 50 to 70 per cent. Living fascia as a suture material is indi-

1. J. K. Donaldson, Little Rock, in *Jl. Ark. Med. Soc.*, Feb.

2. J. B. Wharton, El Dorado, in *Jl. Ark. Med. Soc.*, Feb.

cated especially in those individuals with hernia as a result of an extremely weakened floor of the inguinal canal and in the repair of unusually large hernias. Steel wire has a few followers in suturing abdominal wounds, particularly hernias.

It would seem that the evidences of adhesions of consequence are so plain, and the number of abdominal operations so great, that all doubts as to the technique least liable to produce adhesions would be soon resolved.

WRONG GLASSES WILL NOT INJURE EYES

VERY welcome is the appearance of a refutation of a lot of superstitions as to eyeglasses and what they will do. A Harvard man¹ who has gone to Iowa to practice ophthalmology tells us plainly that you don't strain eyes in reading in dim light any more than you strain your ears in listening to soft music.

Many a patient have I told this: You don't *strain* your eyes a bit more when you try to read in too-dim light, than you *strain* your gun when you shoot at a bird beyond the gun's range. In one instance you fail to get the meaning; in the other you fail to get the bird; but there's nothing straining about either procedure.

We must counteract some old adages which are as prevalent as measles: "Don't read too much, you'll ruin your eyes." "You mustn't read in such poor light, you'll injure your eyes." "You must have your glasses changed every two years." The treatment must also counteract a recent commercial advertising campaign which is attempting to sell light by instilling fear in the customers' minds, rather than on the basis of their comfort; also the fear of the man who drives a car at night, of the person who must work under bright or dim artificial light and who is unfortunate enough to believe the advertising copy which suggests that insufficient light will cause injury to the eyes.

It is not sufficient to tell the person who experiences pain when he is forced to look at a bright light that no harm is being done, because he will not believe it. You must tell him: "Hurts! Of course it hurts! You should be glad that a bright light causes pain. If it did not when you were a year old, your mother could not have been able to make you understand that you must not look at the sun." There are some lights that are too hot the sun, a blast furnace, a glass blower's flame—from which the eyes should be protected by a heat absorbing glass. But if you must drive a car at night or work before footlights, do it without fear, and disregard the discomfort which is only a normal reflex provided for your safety.

There can be no more injury to the retina or

optic nerve produced by a weak light stimulus than there is caused to the ear or hearing nerve by listening to soft organ music. Some with normal eyes, or suitable lenses complain of pain after using their eyes. Assuming adequate fusion and that we are dealing with a functional problem, this is unimportant. The eye neither knows nor cares whether it's looking at the end of a short ray of light coming from a book or a piece of cloth, or a long ray of light coming from a tree a mile down the road. To read, since we have two eyes, we must turn them in to the same word, and we must pull on the muscles which focus the rays. Such muscle work carried on hour after hour will naturally tire the eye muscles just as the leg muscles will be tired after hours and hours of standing; but neither eye nor leg will be injured.

Another fear is that of not wearing the magic glasses and of wearing the wrong glasses. Office workers want glasses to protect their eyes. This idea has been sold to them by glasses salesmen and word of mouth advertising for so long that it amounts almost to a fetish. An office in a nearby city has a complement of 26 young people between the ages of 25 and 35, 24 of whom are wearing glasses! The half-diopter spheres and cylinders for relief of symptoms of so-called asthenopia afford no relief in a vast majority of cases. The wearer tries someone else who prescribes slightly different but equally worthless lenses, and he still obtains no relief, because his trouble is fear, not ocular abnormality. Such a person goes through life with a pocketful of glasses and no confidence in anyone.

The treatment for such a "no-glass" or "wrong-glass" fear which we have found most effective is to make the statement "You must wear a certain glass," and then proceed to show the patient how ridiculous the statement is. All any lens can do is to change the direction of light rays. If one can say that rays of light must enter the eye in one specific direction and no other, it is equivalent to saying that you must never move your eyes. It makes no difference to the eye whether you wear the right glasses, or any glasses at all. The only thing that matters is that you see well enough to suit you. You don't have to wear glasses because you do close work, or because you work under an artificial light, and you don't have to change your glasses every two years because someone tells you to.

The fear of blindness felt by children and grandchildren of someone who went blind must be handled individually. If the cause of blindness be not familial the ophthalmologist should simply say the individual's chances of having a similar condition

¹ A. M. Dean, Council Bluffs, in *Jl. Iowa State Med. Soc.*, Feb

are those of the general public, just like the chances of being struck by an automobile.

The flat way in which this thoroughly trained eye-doctor brands as false the propaganda of certain of those with something to sell plainly shows that he is indignant at the way our people are being held up.

The whole of the article should be printed in every Public Health Bulletin and every daily newspaper in the United States.

DOCTOR ALBERT HOUCK

Nobility consists of virtue.—Don Quixote

THAT he was "one of Nature's noblemen" can be truly said of Dr. Albert Houck. For more than fifty years he was active in his chosen profession, bringing health, joy, comfort and sunshine into the lives of those who were so fortunate as to come under his benign influence. A rare gentleman typical of the finest and best traditions of the old South, his long and useful life was devoted to service to mankind. He was a good doctor. In the practice of medicine, his arrival at the home of a patient brought relief to every member of the family. His presence inspired even the desperately ill with new courage and hope, factors which often tipped the scales in favor of the patient.

Nature endowed Doctor Houck with a fine physique, a distinguished appearance and when advancing years made it difficult for him to get about, his carriage remained as upright as his character. His appearance was still commanding and distinguished. Always was he the perfect gentleman. No one could talk with him even for a few minutes without realizing he was in the presence of one of the Lord's elect.

Albert Houck was born in Rowan County, December 15th, 1855. He was educated in the county schools, at Catawba College—then at Newton, Davidson College, and was graduated in medicine from the College of Physicians and Surgeons, Baltimore, in 1884. Post-graduate courses were later taken at Bellevue Hospital, New York City. He did his first professional work in Ashe County, later moving to Caldwell. He settled at Lenoir in 1891 and spent most of his professional career there, except six years in Statesville and nine years as a member of the staff of the State Hospital at Morganton. He was a member of the Caldwell County Medical Society, the Tri-County Medical Society, The Ninth District Medical Society, the Medical Society of the State of North Carolina, the American Medical Association. He was a member of the Iredell-Alexander County Medical Society while located at Statesville, and of the Burke County Medical Society while at Morganton,



DOCTOR HOUCK

He retired in January, 1939, when he removed to Virginia to make his home with his children. He died suddenly of a heart attack on December 4th, 1940, at the home of his daughter at Chilesburg, Virginia. Surviving Doctor Houck are one son, W. A. Houck of Beaverdam, Virginia, and a daughter, Mrs. Arthur Cowles of Chilesburg, Virginia. His body lies in the cemetery at the Chapel of Rest, in Happy Valley, Caldwell County, under the shadow of the mountains he loved so well.

In addition to his professional services, Doctor Houck was a great asset to the civic, religious and educational life of the community. On his retirement he presented to the Caldwell County Library his medical library of more than 300 volumes, the accumulation of a life-time.

Doctor Houck was a close observer of nature. He loved the country, the woods and the open sky. He was fascinated by a beautiful sunrise or sunset, and watching the approaching twilight and the formation of tinted clouds in the western sky was a favorite pastime. Flowers were his hobby in later years. He loved them, especially dahlias and roses, and spent much of his time working with them.

He collected poems and committed many of them to memory. He liked to collect pictures, especially historical and humorous. His taste for books ran in much the same channel—history, biography and humor. He had a wonderful way of retaining what he read and could repeat it accurately, even after a long period of time. He was a faithful student of the dictionary and encyclopedia, and when he could not be outside, he loved to study words for their exact meanings, studying the encyclopedia for odd bits of information. The unusual had a strong appeal for him. He had stored in memory a vast amount of unusual and interesting knowledge, which made him an exceptionally good conversationalist.

He was a man who did not mind being alone. He could be as happy alone, with his own thoughts and in his own company, as he could surrounded by his fellows. As long as he lived, he felt that he was fortunate in being able to be up and doing the things that were of service to others.

It is not fitting that a great doctor should pass without recognition of his services to mankind, especially one who has labored so long and so faithfully.

There should be a memorial to the memory of every doctor who has well and ably ministered to the sick and distressed, day and night, until advancing years and infirmities have made it impossible for him to go longer about his daily work.

Memorials of marble and stone will, in time, be obliterated and forgotten; but faithful service to one's fellowmen remains green in the memory of the human race and earns immortality for every good doctor.

After a man is gone the kind things that are said about him do him no good. He never sees the flowers that are sent. Eulogies to him mean nothing. His family, friends and colleagues appreciate such remembrances which come out of respect and affection to one who has labored well and faithfully. Others are thereby encouraged to perform, even more valiantly, in the field of service to mankind when they feel that their efforts are appreciated, even though the appreciation may come late—often too late.

In the passing of a doctor, there is a note of extreme sadness. There is a tremendous loss to the community in which he lived and worked. The humblest doctor, in the most out-of-the-way place, who lives up to the ideals of his profession, is a great man.

Seldom are doctors appreciated at their real worth until they are gone and there is no one left to perform their labors, or those who take up the work not be able to fill the place so satisfactorily

as the man of long experience and an intimate knowledge of his people and the community he serves. An experienced doctor usually has a wise and tolerant understanding of human behavior. He knows his people as only a physician can.

Gallantry on the field of battle is often rewarded with medals but those who know what the real doctors go through with in their daily work realize that they earn, every day of their lives, by their fortitude, bravery, devotion to duty—gallantry in the face of the enemy—such as few soldiers have ever exhibited.

Here again it is not out of place to mention that the medical profession is the only altruistic profession—has as its highest aim elimination of the very cause for its own existence.

The true doctor enjoys doing things which prevent disease, the things which make people live longer and the things which make them happier.

In the passing of Doctor Albert Houck, a great man is gone from among us, but his memory will ever be green in the minds of those who knew him. A gallant soldier is gone from the field of battle. There is no medal which can be bestowed which could adequately portray the gratitude and appreciation of those he served so well, so long and so faithfully.

—JAMES W. DAVIS.

DOCTOR GEORGE WILLIAM PRESSLY

IN mid-December Dr. Pressly died in the home of his ancestors in Greenwood County, South Carolina. Almost the whole of his professional life was spent in Mecklenburg County, North Carolina.

To Charlotte Dr. Pressly was largely instrumental in bringing the blessings of modern surgery. But acceptance of his abilities as a surgeon never caused him to withhold his skill as an all-round doctor.

Soon after my coming to Charlotte a well-informed and accurate citizen, in my presence, paid the highest tribute to Dr. Pressly that I ever heard paid a man. Dr. Pressly's worth I had had no opportunity to know. This citizen said: "There is a doctor in this city who, if he were to come into his office and find two calls for his services, one from the richest man in the city, the other from the poorest, would go to see the poorest man first, knowing the rich man could easily get another doctor. And that doctor is George Pressly."

After coming to know the doctor for whom so much had been said, it was easy to see why such words were spoken of him.

In a court trial in which the propriety of his conduct of a surgical case was brought into question, Dr. Pressly, on the stand, showed such trans-

parent honesty, readily admitting that he might have been at fault, as to utterly confuse and confound the prosecuting attorney; who was heard to say that he did not know how to proceed.

A great store of knowledge, excellent judgment and nimble fingers gave him great capacity for dealing with illness. A compassionate nature made this capacity available at all times to all persons. It may be said of him as of a Virginia doctor of a hundred years ago: He possessed that blessing to others, but often curse to himself, a tender heart.

His always rather frail body worn out in work beyond his strength, his last few years were spent in the quiet and restfulness of life on the farm on which he and many another of his name had been born.

He thought no evil, spoke no evil, did no evil, understood no evil. The Devil must, long since, have given up trying to tempt him.

To all these gifts, there was added the gift of glowing expression. Pity it is that this tribute could not be penned by one as skilled as himself in celebrating high desert.

He has his good part with the pure in heart.

The soil out of which such men as he are made is good to be born on, good to live on, good to die for and to be buried in.—*Lowell*

DOCTOR THOMAS W. M. LONG

THE night of February 3rd, the doctor who held the offices of Secretary-Treasurer of the Medical Society of the State of North Carolina and Senator from the two counties of Northampton and Halifax died suddenly at the home of a brother in our capital city of Raleigh.

Dr. Long was only 55 years of age, but he had served long and in various capacities. He had been a member of the Board of Medical Examiners of his State, President of the State Sanatorium Board, member of the Board of Directors of the State Hospital at Raleigh and of the Executive Committee of the State Medical Society. This was not his first term of service as State Senator.

His many officers had given him unusual opportunity to serve his people, particularly to serve in the way of improving health and saving life. Many a health measure of the first importance is on the Statute Books of North Carolina because of him. He had introduced a bill before the Legislature now sitting to provide that a sum be added to the charge for licensing each automobile to be run in the State, the money so raised to be used to pay for hospital and medical services to those injured in automobile accidents. It is a meritorious bill and should be enacted into law; not, as some would obscure the issue, in loyalty

to its dead sponsor, but because of the bill's intrinsic merit. Probably the bill would be the better for a little amending, but it should neither be tabled nor defeated.

Dr. Long's services as a doctor, as an officer of various medical bodies, as a hospital administrator and as a legislator have entitled him to high place among his professional brethren—among all his people.

ACIDOSIS—From P. 55

proper amount of glucose and insulin to restore the carbohydrate metabolism.

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CHEST FLUOROGRAPHY WITH PORTABLE X-RAY EQUIPMENT ON 1½-INCH FILM

(W. P. DEARING & A. E. TURNER, in *Pub. Health Rep.*, Dec. 27th)

Results from the standpoint of clinical significance are encouraging. Additional refinement of technique should produce better and more uniform pictures. Experience in reading the small films will reduce errors in interpretation.

The place of the X-ray in mass testing is emphasized by the experience of the Metropolitan Life Insurance Company with preemployment examinations. Of 200 clinically significant discovered only by means of X-ray, after a history and physical examination had failed to indicate disease.

Although there is need for further development of techniques and materials, fluorography with 35 mm. film and portable X-ray equipment offers promise as a practicable procedure and for large-scale tuberculosis case finding in rural areas at reasonable cost.

A LOW-PROTEIN DIET (7%) increased the susceptibility of rats to orally administered sulfanilamide, increasing the mortality rate and the incident of anemia as compared with similarly treated rats on a diet containing 30% protein.—*M. T. Smith et al.*, in *P. H. Reports*.

Broadly stated, the general health of self-supporting students is inferior to the health of non-self-supporting students; however, to further increase the accuracy of this final conclusion, a larger study of a greater sample of students in both groups should be made. — *Perlman, Ann Arbor, Michigan*.

GONORRHEAL VAGINITIS—From P. 62

mucosa. The mother could not insert the capsules because of the struggles of the child. Sulfanilamide was given for two weeks and theëlin continued. Two weeks after discontinuing sulfanilamide the smear was still positive, but the mucosa was changing and the mother could now use the suppositories. Theëlin was continued and sulfanilamide repeated for ten days. The discharge ceased and six smears were negative.

Results of treatment with estrogenic substance have been good. Vaginal suppositories of 1,000 units were used nightly with 2,000 units theëlin hypodermically twice weekly for two or three weeks, and sometimes longer. Perhaps theëlin is superfluous, with amniotin, but I think it gives a quicker response.

Four children were given this treatment alone. Two responded to first course of seven to eight weeks, two required four to eight weeks' additional treatment.

In five cases it was used after failure with sulfanilamide. In four of these cases cure resulted from six weeks of theëlin and amniotin; the fifth, one of vaginal ulceration with bleeding, required eight weeks' additional treatment.

In two cases with continued evidence of infection after six weeks of amniotin and theëlin and two weeks of sulfanilamide, the addition of floraquin suppositories to aid in vaginal acidification, with continuation of theëlin for four and nine weeks, resulted in cure.

In one case in spite of complementary courses of sulfanilamide, it was necessary to give two courses of theëlin and amniotin of six and eight weeks.

In another in spite of two courses of sulfanilamide it was necessary to give three courses of theëlin and amniotin.

In another, after a year's treatment including thirty-two weeks of theëlin and amniotin and two courses of sulfanilamide, clinical evidence of the disease persisted, but this cleared spontaneously several months later.

Three of the children developed enlargement of the breasts, which subsided after medication was stopped and in three there was early appearance of pubic hair, otherwise there were no ill effects of the rather large doses of the estrogenic substances.

Vaginal mucosa response occurred in fifteen of the cases in from one to two weeks, while in the remaining two there was no response for ten weeks. The mucosa returned to normal appearance in average of two weeks after stopping the treatment.

CRITERIA FOR CURE

The criteria for cure were freedom from discharge and at least four negative smears and one

negative culture. Most of the cases had smears at weekly intervals for four weeks, then four at two-week intervals. Nine patients have been well for over two years; three for over a year; two for over six months, and three for over four months.

Normal menstruation has occurred in three of the girls since treatment.

SUMMARY

A brief review is made of the incidence, etiology, symptoms, diagnosis and treatment of gonorrheal vaginitis. Seventeen cases are reported. No results were obtained in the two cases treated with neoprontosil. Sulfapyridine was tried on three of the older girls, but all had gastric upsets before effect of the medication could be determined. Sulfanilamide was used in fourteen cases, the course repeated in six. Possible cures were obtained in only two.

Amniotin suppositories and theëlin hypodermically were used in the seventeen cases, of which sixteen were cured. In five of the cases the course had to be repeated, and in four it had to be given for the third time. In one there was no apparent cure.

CONCLUSIONS

1. Neoprontosil and sulfanilamide are disappointing drugs in the treatment of gonorrheal vaginitis of children.
2. Sulfapyridine, more effective in the disease, is prone to cause gastric disturbances in children.
3. Cures can be effected in 90 per cent of the cases by the use of amniotin and theëlin in oil.
4. Treatment should be continued for at least eight weeks.

ADDENDUM

Since presenting this paper, one 6-year-old girl who had been treated with sulfanilamide and theëlin and amniotin and reported as cured after 31 negative smears or cultures had a recurrence with a more profuse discharge that at the onset. She was re-treated, using sulfathiazole, for 10 days at which time gonococci were still present. Amniotin and theëlin was repeated for eight weeks and to date seven smears have been negative. Three other girls were treated with sulfathiazole alone, all responding within a week and have had four or more negative smears. Sulfathiazole was well tolerated though one developed a profuse rash on the seventh day.

GONOCOCCAL VAGINITIS OF CHILDREN

(R. M. Lewis, Yale, in *Bull. N. Y. Acad. Med.*, Jan.)

Cohn and his associates recently reported the results of their long study of this troublesome disease. In a large group of untreated children 75% recovered in 6 months or less. Vaginal suppositories of estrogens, which have been widely used, were found to give apparently good clinical results with smears which early became negative. That these results are more apparent than real is shown by the fact that cultures taken from the infected children so treated remained positive about as long, and as often, as in the untreated controls. Sulfapyridine given at 4-hour intervals 4 i. d. cured 90% of a series of cases in which it was given. The dose for a child should not exceed 0.43 gram per pound of body weight daily, and should not total more than 2 grams per day.

PHYSIOLOGY—From P. 63

It must not be forgotten that mastication serves a much larger purpose than merely finely dividing food.

The chewing movements cause intimate contact of food particles (properly salivated, of course) with the gustatory organs. Then, too, fragrant odors are set free that stimulate the nerves of smell; and, most important of all, inaugurate the flow of psychic gastric secretion, or appetite juice.

Pari passu with mastication runs salivation. In order of importance saliva subserves a half dozen purposes. It has a small but not negligible chemical action; it keeps the mouth clean, excretes certain substances, lubricates and above all it liquefies. And liquefaction is the increasingly and cumulatively needed agent, as food moves down the digestive tract, to act as the indispensable solvent for its mechanical and chemical break-up.

In fact, unless sufficiently liquefied, nothing can be swallowed, as witness, "trial by ordeal" in the Dark Ages, when a suspected criminal was made to eat dry flour. The fear of detection inhibited salivary flow, making swallowing wellnigh impossible.

The flow of saliva is attributed to reflexes both unconditioned and conditioned by way of afferent sensory fibers through the chorda tympani, glosso-pharyngeal, lingual and sympathetic nerves.

Stimulation of any sensory nerve in the body may occasion secretion of saliva.

Anything put into the mouth will cause salivation, and, indeed, produce a saliva, as Pavlov has pointed out, that suits the nature of the substance ingested; *e. g.*, for dry material a watery secretion; for acid a saliva rich in protein because of its buffering reaction. Milk evokes a saliva loaded with mucin, etc.

Conditioned reflexes originating from visual, auditory, olfactory and cutaneous impulses are very numerous in man.

The sight of savory food, the smell of a broiling, juicy beefsteak, hearing the dinner bell, will make the "mouth water."

The ptyalin content of saliva initiates the chemical changes, affecting, however, only certain carbohydrates. Raw starch is not altered, only boiled starch is converted into maltose and isomaltose. It is noteworthy that ptyalin activity continues for a good while in the stomach so that under favorable conditions three-fourths of potato-starch is actually split into the above mentioned products before the acidifying action of gastric juice inhibits further action.

The lubricating action of saliva inheres largely in its mucin content—needed where little mastication

or digestion occurs. But the whole mouth, especially the mucous membrane, the tongue and lips, must be kept smooth and slippery to make them resilient and supple, so that coarse particles shall not irritate and will be readily moved around and finally coated with mucin for easy swallowing.

By washing out food detritus, bacteria, eroded epithelial cells etc. from gums and teeth, and slushing them down into the esophagus, saliva maintains excellent oral hygiene—as suppression of salivary flow occurring in some fevers, occasioning bad breath and coating of teeth with sordes, testifies.

The excretory function of the salivary glands is evidenced by their elimination of certain drugs and some organic and inorganic substances.

A high content of urea is found in the saliva in cases of chronic nephritis; diabetics excrete sugar, overactive parathyroids calcium, by this route.

The clinically well-known "blue, or gray line" marking the gums in lead poisoning is essentially a chemical combination of lead, excreted with the saliva, and sulphur obtained probably from tartar deposits on teeth, or from decaying teeth.

Inorganic iodides absorbed from the intestines appear in the saliva in four to six minutes—a striking exercise given medical students in every pharmacological laboratory, and clinically valuable for the iodide gastric-motor-function test.

Straub's startling mouse test for morphine in the saliva of race track horses; the stomatitis and excessive salivation caused by mercury etc., further emphasize the excretory power of the salivary glands.

On good grounds it is stated that the virus of infantile paralysis has been demonstrated in saliva, so that by injecting such saliva in rats or monkeys this disease can be reproduced.

Since mumps is now diagnosed not primarily as a parotid affection but a systemic invasion, the secondary involvement of the parotid glands must be ascribed to an infection in them that attacks their tissues while passing through and out in the salivary secretions.

Pathological reflexes (gastro-esophago-salivary reflex); *e. g.* in spasm of cardiac sphincter, duodenal ulcer, carcinoma etc., produce pronounced salivation and the so-called postprandial water-brash.

The effect of saliva on the prevention of dental caries particularly when produced by acidophilic bacteria or the presence of a rich content of mucin in the secretion is not now attributed to its alkalinity (for it is normally more usually faintly acid in reaction), but to its marked buffering power.

This buffering effect is much lessened by ingested sweets and, of course, acid foods or drinks; much increased by bitter substances.

SIGMUND FREUD

(I. S. WECHSLER, in *Jl. Mt. Sinai Hosp.*, Jan.-Feb.)

It is difficult to appraise the worth of Freud's contribution, to say what is of permanent value and what is ephemeral, or what is likely to remain as the heritage of human knowledge and what will lyield to the corrosive effect of time. If I should dare to become a prophet, I would say that psychoanalysis will not survive best as a method of treatment, despite the acknowledgement that certain neuroses are best treated by it. I would venture the guess that analysis will be remembered longest for the insight into normal and abnormal behavior which it has vouchsafed and for its excellence as a method of investigation. I am not so sure that it will survive as a body of psychology, although one can only feel grateful for its honest approach to the study of sex instincts. But if one membered or how much of them will survive, one cannot predict how long Freud's contributions will be restate with assurance that no man of his generation has had wider influent or stamped his personality more deeply on the thinking of his age.

THE USE OF BURBOT-LIVER OIL INTRAMUSCULARLY

For Ocular Avitaminosis A

(H. C. Kluever et al. Fort Dodge, in *Jl Iowa State Med. Soc.*, Dec.)

One c. c. of fortified burbot-liver oil intramuscularly on June 1st and June 3rd; no other treatment; repeated on June 7th. Vitamin A was then restricted to 15,000 I. U. (burbot-liver oil) daily by mouth; a proper diet was advised at this time. The corrected vision on August 6th was 20/15 for each eye; vision at night had noticeably improved.

Recovery from various degrees of night blindness following intramuscular administration of fortified burbot-liver oil in the three cases in which the light threshold was determined. There was improvement of corneal ulceration and superficial punctate keratitis in two cases. In one case which appeared to be early xerophthalmia, vision improved from 20/100 for each eye to 20/20 O. D. and 20/25 O. S. in one week.

A case of recurrent corneal desquamation following injury appeared to be controlled only after intramuscular administration of Vitamin A.

Corneal vascularization following cataract extraction, in one instance, responded favorably to the combined effects of riboflavin and Vitamin A.

There was no local reaction to the intramuscular administration of fortified burbot-liver oil.

NORTH CAROLINA HAS A NEW PHARMACY SERVICE

Beginning the first of the year the State will have an Itinerant Instructor and Consultant in Pharmacy, in the person of W. Lee Moose, Ph.G., successful and prominent pharmacist of Albemarle and Asheville. This position was made possible under the George Dean Act of the Federal Government and funds provided by the State; and sponsored by the North Carolina Board of Pharmacy, the N. C. P. A. and the School of Pharmacy of the University. The work will consist of holding classes at convenient locations throughout the States as well as consultations in the individual stores.

NEWS

JOHN PHILLIPS MEMORIAL AWARD

The Board of Regents of the American College of Physicians, has voted the John Phillips Medal for 1941 to Dr. William Christopher Stadie, Associate Professor of Research Medicine at the University of Pennsylvania, for his great contributions to the knowledge of anoxia, cyanosis and the physical chemistry of hemoglobin, and for his recent studies on fat metabolism in diabetes mellitus.

NEUROPSYCHIATRIC SOCIETY OF VIRGINIA

Program of meeting held in the academy of medicine auditorium, Richmond, January 29th: Yeast Infection of the Nervous System, Dr. J. Asa Shield, Richmond, Mental Deterioration in the Psychoses, Dr. Ernest H. Alderman, Richmond, The Problem of the Psychopathic Personality in the Institution for the Feeble-minded, Dr. G. B. Arnold, Colony, Suicidal Attempts as Seen in a General Hospital, Dr. Patrick H. Drewry, Jr., Richmond.

RICHMOND ACADEMY OF MEDICINE—Stated Meeting, January 28: Recent Work on Human Hypertension, by Dr. Eugene M. Landis, Professor of Internal Medicine in the University of Virginia School of Medicine.

On February 4th, the Fourth Lecture in the Endocrine Symposium, Endocrine Therapy of Abnormal Menstruation and the Menopause, by Dr. Willard Allen of the Washington University School of Medicine.

HOSPITAL AT RADFORD OPENED FEBRUARY 10th

Radford's new community hospital opened February 10th, with Dr. Edward R. Ambrose as resident physician. On the staff are Drs. J. J. Diesen, T. L. Gemmell, H. L. Dean and H. D. Fitzpatrick of Radford and Drs. A. M. Showalter, R. M. DeHart and R. H. Grubbs of Christiansburg.

NEUROPSYCHIATRIC SOCIETY OF VIRGINIA

At the meeting on January 29th, in Richmond, the following officers for the next year were elected:

President, Dr. W. Gayle Crutchfield, Vice-President, Dr. Howard R. Masters, Secretary-Treasurer, Dr. Edward H. Williams,—all three of Richmond.

OBSTETRICIANS AND GYNECOLOGISTS NEW OFFICERS

Dr. R. A. Bartholomew, of Atlanta, was elected president of the South Atlantic Association of Obstetricians and Gynecologists February 8th.

Delegates voted to hold their 1942 convention in Atlanta early next February.

Dr. Oren Moore, Charlotte, was named president-elect. Dr. Robert A. Ross, Durham, was reelected secretary-treasurer.

State committees, who are to select their own chairman within a month after the convention, include:

North Carolina: Dr. W. B. Bradford, Charlotte; Dr. Bayard F. Carter, Durham; Dr. T. L. Lee, Kinston, and Dr. Ivan M. Procter, Raleigh.

SIGMA ZETA LECTURE

Doctor E. M. Landis, Professor of Medicine at the University of Virginia Medical School, will deliver the annual Sigma Zeta lecture on Wednesday, March 12th, at 8:30 p. m. in the Baruch Auditorium of the Egyptian Building, Medical College of Virginia. His subject will be



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RICHMOND ACADEMY OF MEDICINE

The following officers of the Section on the History of Medicine were elected for the next year at the annual meeting of the Section on February 11th:

Chairman: Dr. Marvin Pierce Rucker

Vice-Chairman: Dr. William Lowndes Peple

Secretary-Treasurer: Dr. Alexander Stephens Graham.

The Section held its annual banquet and meeting on Tuesday, February 11th. Guests of honor were Drs. Andrew D. Hart, Jr., Lecturer on the History of Medicine at the University of Virginia, and Reginald Fitz, Lecturer on the History of Medicine at Harvard University.

DR. HAMILTON W. MCKAY, of Charlotte, is in Florida convalescing rapidly from an illness which confined him to hospital for some weeks.

DR. JOHN QUINCY MYERS, of Charlotte, who has been indisposed for some weeks, is convalescing in the mountains of the State.

DR. G. W. KUTSCHER, JR., of Asheville, underwent a major surgical operation on February 11th. Now he is reported to be making a rapid recovery.

MARY WASHINGTON HOSPITAL, at Fredericksburg, Va., has received from an anonymous donor a gift of \$20,000.

DR. A. DE TALMA VALK, of Winston-Salem, is the latest addition to the Faculty of the Bowman Gray School of Medicine of Wake Forest College. Dr. Valk will be Professor of Chemical Surgery.

DR. W. D. FARMER, of Duke, is now with Dr. G. W. Banner, of Greensboro, in practice in diseases of eye, ear, nose and throat.

Dr. Farmer graduated from Duke in the class of 1934 and served as interne at Baltimore City hospital in 1934 and 1935. He was interne in surgery and assistant in the Oto-laryngologic clinic at Duke 1936-39 and associate in Oto-laryngology since 1939.

The alumnae of the TRAINING SCHOOL FOR NURSES of the H. F. LONG HOSPITAL, of Statesville, presented to the hospital on December 3rd a painting of the founder of the hospital—the late Dr. Henry F. Long.

DR. MONROE T. GILMOUR announces the opening of offices for the practice of internal medicine at, 117 West Seventh Street, Charlotte, North Carolina.

DR. WILLIAM K. McDOWELL, of Scotland Neck, recently elected health officer of Richmond County, has resigned to accept the same position in Edgecombe County.

DR. L. C. FERGUS has been elected health officer of Brunswick County, North Carolina.

DR. IRVIN S. WRIGHT, of New York, was guest-speaker at the meeting of the Guilford County Medical Society

in Greensboro on the night of January 6. Dr. Wright discussed the: Diagnosis and Treatment of Obliterative Arterial Disease.

MARRIED

Dr. Herman Franklin Eason and Miss Kathryn Amanda Scroggs, of Raleigh, were married on December 21st. Dr. Eason is a member of the medical staff of the Sanatorium.

Dr. Fleming Fuller, of Kinston, and Miss Dorothy Barnes, of Brenham, Texas, were married on December 21st.

Dr. George B. F. Traylor, of Lumberton, North Carolina, and Miss Leslie Chappell Bradshaw, of Richmond, were married on December 21st.

Dr. Robert Richardson Eason, of Buena Vista, and Miss Mabel Nash, of Blackstone, Virginia, were married on December 21st.

Dr. Arthur George Kussmann, of Ripon, Wisconsin, and Miss Louise Winfree Scherer, of Chesterfield, Virginia, were married on December 21st.

Dr. Zachary Fillmore and Miss Virginia Fay Cox, both of Rockingham, were married on February 1st.

Miss Earline Mann and Dr. Fitzgerald Cavedo, both of Richmond, February 12th.

DEATHS

Dr. Francis Lee Thurman, Buena Vista, Rockbridge County, general practitioner and for years assistant surgeon of the Chesapeake and Ohio Railway, died January 19th at the University of Virginia Hospital.

Dr. Thurman was an authority on old families and homes in Virginia and wrote for publication on these subjects. He was an ardent sportsman and for some years was secretary and treasurer of the Keswick Hunt Club and at one time was master of hounds. He was chairman of the Buena Vista Board of Health, a charter member of the Rockbridge Historical Society and had been president of the Rockbridge Medical Society and a member of the City Council.

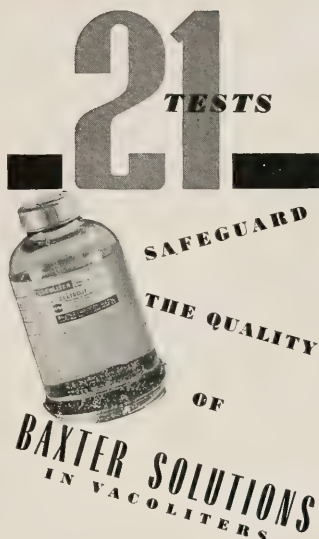
Dr. Philemon H. Neal, 44, ear, nose and throat specialist of New York City, died in Doctor's Hospital, New York, following an operation several weeks ago.

Dr. Neal, a native of South Boston, Va., was a graduate of Wake Forest, and of the Medical College of Virginia, Richmond. He did interne work in New York City, later the New York Eye and Ear Infirmary.

Dr. J. L. Neal, of Danville, Va., is a brother.

Dr. A. B. McCreary, 45, State Health Officer of Florida, died at a hospital January 24th of a heart ailment. Dr. McCreary had held positions as epidemiologist in the Memphis, Tenn., city health department, assistant in public health at the University of Tennessee, director of the bureau of epidemiology for the North Carolina State Board of Health, and health officer of Northampton County, Va.

Dr. Charles Wardell Stiles, 74, discoverer of hookworm as a parasite of humans, and a recognized authority on medical zoology, died at Marine Hospital, Baltimore, Jan.



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24th. For a number of years Dr. Stiles was stationed at Wilmington, and from there cooperated with the State Board of Health in a campaign against hookworm disease in North Carolina.

Dr. W. E. Jennings, 55, died unexpectedly at his home at Danville, Va., January 26th. He had been out riding and was seated in a chair reading a newspaper when overcome with a heart attack.

Dr. James Marvin Wells, of Middleburg, N. C., died January 25th in Maria Parham hospital, Henderson, N. C. Dr. Wells had been ill six weeks. He was 65 years of age, a native of Shelby.

Dr. C. E. Moore, 86, died at his home at Wilson, N. C., February 13th. Dr. K. C. Moore, of Newton Grove, is a surviving son.

UNIVERSITY OF VIRGINIA

The Phi Lambda Kappa Medical Fraternity annual undergraduate award, a gold medal, for the scientific thesis judged to be best was won this year by Leonard J. Yamshon, a member of the Third-Year Class in the Department of Medicine. The thesis was based on the research done on a presomite human embryo under the direction of Dr. James E. Kindred of the School of Anatomy.

On January 16th, Dr. C. C. Speidel addressed the Harvey Society of New York City on the subject, Adjustments of Nerve Endings.

Dr. I. A. Bigger, Professor of Surgery at the Medical College of Virginia, gave the second Alpha Omega Alpha Lecture on February 7th. He spoke on Ligation of Large Arteries.

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Academy of Medicine on February 11th, Dr. Andrew D. Hart, Jr., gave one of the Walter Reed Lectures. He discussed Ignorance and Medicine.

On February 12th, Dr. Staige D. Blackford presented a paper on Swallowed Air before the Stuart Circle Hospital Clinical Club in Richmond.

On February 7th, Dr. T. J. Williams spoke before the South Atlantic Association of Obstetricians and Gynecologists, meeting in Jacksonville, Florida. His subject was Sterilization in the Puerperium.

On February 11th, Drs. E. P. Lehman and Floyd Boys spoke before the Danville Academy of Medicine on the subject, Heparin and Peritoneal Adhesions.

At the meeting of the Historical Section of the Richmond

BOOKS



A SURGEON EXPLAINS TO THE LAYMAN, by M. BENMOSCHE, M. D., with diagrams by BHOLA D. PANTH. *Simon & Schuster*, New York City. 1940. \$3.00.

The author believes that people generally should be told more, about themselves and their ills, but that they should not be mistold.

We are informed why the book was written; then about the tools of surgery, about the removal of the appendix and near-by organs, about tonsil and adenoid operations, and a lot of the other favorites.

The statement, "Two great European surgeons, Paré, in France, and Harvey, in England, did much to advance the knowledge and status of the man-midwife," is not quite clear. The only two Harveys of England of which this reviewer has any knowledge are the great William Harvey, the discoverer of the circulation of the blood; and one Gideon Harvey (died about 1700), who called his contemporaries "dung-doctors who drive out diseases through the anus." Both these are classed as physicians and the line between physicians and surgeons is sharply drawn in England.

Then, Sir James Y. Simpson is called English, although Scotland gave him birth and he became eminent in Edinburgh.

It is said that *until 1793 not a single caesarean section had been performed in which the mother lived*. Evidently the author places no credence in the oft-told tale that the Swiss sow-gelder, Jacob Neuffer, about the year 1500, so delivered his own wife, and that she survived to bear several children and died at the age of 77.

The Transactions of the Medical Association of the author's own State for the year 1892 carry an article on the Achievements of American Surgery from which it may be seen that the South's achievements were neither few nor insignificant;

so Sims doing his great work in Alabama need occasion no wonder. It comes to mind that a Professor of Medicine in a medical school in New York City has resigned his chair in order to accept the same chair in the Medical College of the State of South Carolina—and it was not between 1860 and 1865 either.

Maybe Julius Caesar was "snatched living from his mother's womb." The reference is not cited. It is generally agreed that his mother, Aurelia, was alive when her famous son was campaigning in Britain. Certainly Macduff shakes the courage of Macbeth by telling him—

"Macduff was from his mother's womb
Untimely rip'd."

This banter aside, Dr. Benmosché has written a book that doctors and discriminating laymen and laywomen would do well to read. The author has been about. Innately judgmental, his acquisitions in education have made him knowledgeable. From his rich store of knowledge he has chosen well, and all is expressed in a pleasing way.

Finally, brethren, he says *gynecology*: and he does not mar his writings with "after all," when he means that a person or a bit of work is distinguished or famous he does not say he or it is *outstanding*; he does not *cystoscope* or *bronchoscope* or *operate* a patient.

HOPOUSIA, or The Sexual and Economic Foundations of a New Society, by J. D. UNWIN, M. C., Ph. D., (Cantab), Late (1914) Classical Exhibitioner, Oriel College, Oxford and (1928-1931) Fellow Commoner, Research Student, Peterhouse, Cambridge; with an introduction by Aldous Huxley; Preface by Y. J. Lubbock. *Oscar Piast*, 250 West 57th St., New York City. 1940. \$4.00.

The title is derived from the Greek word meaning where. Aldous Huxley regards the book as valuable, but incomplete. The author says the reformer merely patches the social system, and eventually the patches fall apart. The author regards society, not as a collection of individuals, but as a network of human groups. He says that often the rationalist is not the scientist's friend, that the illusion of progress has arisen because, in whatever direction a society travels, it thinks it is advancing. After careful investigation he says that expansive energy has never been displayed by a society that inherited a modified monogamy or a form of polygamy. Since the Norman Conquest the period in which any clan or class has dominated has been five generations, 150 years.

Such intensely practical matters as wants, currency, money, and commodity exchange are inquired into. The history of coinage debasement is recited, and the evolution of banks and banking. The Hypousians will not have a commodity-cur-

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"GONOCOCCAL INFECTION IN THE MALE" by A. L. Wolbarst, M. D., Fellow, American Urological Association; Second edition, completely revised and enlarged. 140 illustrations. 7 colored plates. Published at \$5.50 by C. V. Mosby Co.; remainder copies at \$1.00 each while they last. Send no money. Pay Postman on delivery. MEDICAL BOOKS, ROOM 1808, at 1440 Broadway, New York City.

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rency, nor a metal-currency. Cheque - currency, with tokens for very small transactions, is the currency for them.

A chapter goes into details as to four methods of commodity exchange; another as to the four follies; another subdivides the Hypousian structure—provides among many provisions for radical alterations in our educational plan, and for *alpha* and *beta* marriages, the latter a sort of trial-and-error arrangement.

The book will stimulate thought. Our present system is not so good that we can close our minds to radical propositions for change.

HYDROCEPHALUS: Its Symptomatology, Pathology, Pathogenesis and Treatment, by OTTO MARBURG, M. D. Oskar Piest, 250 West 57th St., New York City. 1940. \$3.00.

Few of us would have thought of hydrocephalus as a disease holding the key position in the solution of many fundamental problems in neurology. Yet such is the postulate, and a fair case is made out. The condition is said to be more prevalent now than formerly, and never due to excessive secretion. Trauma is given as an important cause. The diagnosis is based on ventriculography or encephalography.

Diuretics, thyroid extracts, iodine have benefited. Salt and sugar solutions hold more promise. X-ray treatment is not properly appreciated. Spinal puncture is of value in h. communicans only.

The author believes that hydrocephalus is produced by a disturbance in water metabolism.

CLINICAL PELLAGRA, by SEALE HARRIS, M. D., Professor Emeritus of Medicine, University of Alabama. Birmingham, assisted by SEALE HARRIS, JR., M. D., Formerly Assistant Professor of Medicine, Vanderbilt University, Nashville; with a foreword by E. V. McCOLLUM, Ph. D., Sc. D. LL. D., Professor of Biochemistry, School

of Hygiene and Public Health, The Johns Hopkins University, Baltimore. Illustrated. *The C. V. Mosby Company*, St. Louis. 1941. \$7.00.

Dr Harris has been a close student of pellagra for the duration of its recognition in this country. He has made many contributions to our knowledge of the disease. His teachings have contributed largely to the present concept of the condition as one of protean manifestations, each case requiring individual study and management. His book should be in the hands and eyes of every medical practitioner in the South, and it would enable doctors all over the Nation to recognize a lot of cases they are misdiagnosing.

ASHEVILLE'S BEGINNING AS A HEALTH RESORT
(Reprint from *Charlotte Med. Jour.*, 1906)

G. S. Turrent, Asheville, in *Bul. Bunc. Co. Med. Soc.*, (Feb.)

A region a few miles beyond the present compass of the county was known as a health resort some years before its settlement by the whites. The Warm Spring on the French Broad had been discovered in 1778 by Henry Reynolds and Thomas Morgan, two men kept out in advance of settlements (in Tennessee) to watch the movements of the Indians. They had followed some stolen horses to the point opposite, and waded the river. On the southern shore, in passing through a little branch they were surprised to find the water warm. The next year the Warm Springs were resorted to by invalids.

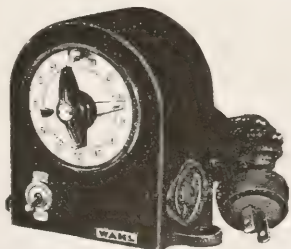
The first consumptive to visit Asheville, so far as we know, was Dr. Hardy, who came in 1821. He was cured, at least he lived here in good health for 61 years.

About 1827 Judge King, of Charleston, and Mister Charles Baring, of the well known firm of Baring Brothers, then living in Charleston, came to Asheville to plant a little colony of summer refugees, driven annually by the heat and fevers from the south. Meeting with opposition, they bought the land now comprising the Flat Rock settlement.

The town, however, continued to be visited by invalids, many of whom were consumptives, off and on till 1870 when the publication of a pamphlet drew wider attention to it. This pamphlet, bore the following title: "Western North Carolina, its Agricultural resources, Mineral wealth.

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Climate, Salubrity and Scenery. By H. P. Gatchell, M. D., etc. Published by E. J. Aston, Esq., Asheville, Buncombe County, North Carolina." The author treats of the climatic advantages with a degree of moderation and accuracy that could have been copied to advantage by many succeeding writers. He states that in 1870 there were many people living in Asheville at an advanced age who had "come there as invalids early in life in the hope of being able to prolong a little their stay on earth."

The writer, who was a professor in Hahnemann College, Chicago, for some years, conducted at Forest Hill the first sanitarium for consumptives ever attempted here.

The following pamphlets were circulated a little later: "Life in North Carolina," a reprint from the *London Daily News*, August 8, 1874.

"Western North Carolina," by Beale and Martin, Asheville, 1875.

"Western North Carolina as a Health Resort," by Dr. J. W. Gleitsmann, reprinted from *Philadelphia Medical and Surgical Reporter*, February, 1876.

"Biennial Report of the Mountain Sanitarium for Pulmonary Disease, 1877."

"The American Mountain Sanitarium at Asheville," by Stanford E. Chaille, *New Orleans Medical & Surgical Journal*, April, 1878.

"The Land of the Sky. Nature's Trundle Bed of Recuperation," by "Guy Cyril," (Hinton R. Helper), about 1880.

Several of these to the number of 64,000 were circulated by Dr. Gleitsmann, a German by birth, a graduate of

the University of Wurzburg, who came here from Baltimore in 1875 after hunting through the Virginia mountains for a suitable location. On June 1st, 1875, he opened the Mountain Sanitarium for Pulmonary Diseases at the old Carolina House which stood opposite to the Sluder place on North Main Street. Here he treated on an average of twenty to twenty-five patients daily for five years, practically all of them coming from a distance; in the winter from the north and in the summer from the south. Dr. Gleitsmann states that of all this number there were not more than a dozen lung patients from the town or immediate vicinity. During the sixth and last year of his stay he treated his patients at the Eagle Hotel.

He gives as his reason for throwing up the work and leaving Asheville, failure to obtain a suitable house wherein to carry on the work. It may be presumed that had more enterprising citizens realized the immense results to accrue from Dr. Gleitsmann's advertising, the difficulty would have been overcome, and the Woodfin House which the doctor desired for a sanitarium would have been obtained for him. Dr. Gleitsmann probably did more than any other man to bring this place into notoriety, for since his time the stream of travel has been continuous.

FEMALE PATIENTS with upper right abdominal pain suggestive of gallbladder diseases, "colitis" or pleurisy may be suffering from gonorrheal perihepatitis. The symptoms may be acute or chronic with formation of violin-string adhesions.—A. P. Hudgins.

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JAMES M. NORTHINGTON, M. D., Editor

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No. 3

President's Address*

Some Problems and Progress in Medicine

CHARLES J. ANDREWS, M. D., Norfolk

THE Tri-State Medical Association is not now, nor has it ever been, a society of specialists. But it is concerned with all specialties and every agency which has prospect of curing or preventing illness or of relieving suffering from human ills. At various times the programs of this Association, discussions and papers published in its Journal, have contributed much to the accomplishment of these objectives.

It is my purpose at this time to call attention to some of the problems which confront the medical profession today and which demand a solution. In examining the list of previous presidential addresses before the Association, I find many interesting and useful subjects such as cancer, heart disease, the art of medicine and many others, but no word of obstetrics. I offer this as one reason if I give special consideration to this subject.

A study of statistics is always discouraging, particularly so when we find that the Carolinas and Virginia are in a high obstetric mortality area, along with many other Southern States. This is no doubt governed to some extent by a high percentage of negroes and whites in a very low income group. It is interesting to note that one-half the babies born in the United States are born of families on relief or with incomes under \$1,000 annually. We are repeatedly asked by lay organizations and magazine writers why the obstetric mortality rate is higher in this country than in most other

countries for which we have records. We have found a way of answering this so far as the State of Virginia is concerned.

The Maternal Health Committee of the Medical Society of Virginia has undertaken to study the records of all maternal deaths occurring in the State. The records are obtained by the State Health Department by a painstaking investigation of every case including the hospital records, the physicians' records, if any, and facts as furnished by attending physicians, and even statements of the family or midwife. In some cases insufficient data are obtained for accurate conclusion, but in many it is only too obvious. This study began with deaths occurring after December 1st, 1939. The cases studied so far number 175, and the list for the year of 1940 is not complete.

Poverty, ignorance, lack of coöperation on the part of the victims or their families is in evidence. In some cases no medical care was available. Many of these cases show need so severe that it exposes us to the threat of state medicine. When we approach the medical side of this, we recognize our old enemies—eclampsia, sepsis, hemorrhage and obstetric accidents. Abortions are included and contribute liberally to deaths from hemorrhage and sepsis. The percentages from each of the main causes are approximately the same as have been credited to them before by other studies, except for a slightly higher proportion from toxemia. Forty-

*To the Tri-State Medical Association meeting at Greensboro, February 24th-25th.

nine in this group died of toxemia, and 90 per cent of these had no prenatal care.

A place in the Hall of Fame awaits the man who discovers the cause of eclampsia; but enough is now known to practically eliminate it if this knowledge can be made available in every case. Prenatal care is the most important single factor. Ninety-three Prenatal Clinics have been organized in the state under the supervision of the State Department of Health and these are beginning to do a successful work. This is an important step; but much more than Prenatal Clinics is needed. It is easy to criticize after the case has ended fatally but more difficult to accurately evaluate the factors.

In 86 of these cases there is reasonable suspicion that death resulted from error on the part of the attending doctor, and in most of these the error was one about which there is little disagreement among doctors. All these errors have not occurred in the homes where suitable facilities for treatment were not available, but in hospitals where these could be obtained. Failure to study the case and to plan for labor and the type of delivery led to disaster; failure to prepare for blood transfusion in the treatment of placenta praevia and hemorrhage was a frequent cause of death. Cesarean section in some cases was obviously inadvisable. Pituitrin in the second stage of labor continues to claim its victims.

Sulfanilamide is undoubtedly saving lives in many cases of infection; but, in spite of its use, 49 of the 175 deaths were due to sepsis. Twenty-three of these were septic abortions mostly self or criminally induced. Occasionally sepsis followed normal labor; but most such cases had been preceded by difficult, prolonged labor, particularly when accompanied by excessive hemorrhage. Sulfanilamide cannot yet be substituted for good obstetrics in the prevention of death by sepsis.

These studies, if used only as a basis for adverse criticism, would not be helpful; but if they cause us to recognize our mistakes as well as those of others they should prove of constructive value. Someone has said that 50 years of experience may mean making the same mistakes for 50 years. The mistakes have to be recognized as such before they can be corrected. We are encouraged by the fact that the efforts already made are reducing the disasters each year. The mortality rate in Virginia has been reduced from 7.2 per 1000 live births in 1930 to 5.1 in 1939. The corresponding figures in the whole United States show a reduction from 6.7 to 4.4 (1938). The states of North and South Carolina are doing active work in this direction with similar results. Further progress

will depend upon funds from the taxpayers' money, wisely and efficiently administered by public officials in close association with organized medicine. It will also depend upon education and reeducation of ourselves through medical association activities and other means, and finally the individual doctor's response to these efforts.

The problem of contraception is closely associated with the misfortunes of obstetrics. The whole movement has been under shadow. Lay groups attempted to teach and force the issue. They have recognized the error of their way and have turned to the medical profession for leadership and direction. In some states, such as North Carolina, this movement is now under the wing of the State Department of Health. There can be no doubt that conception is contraindicated in a considerable number of cases, some temporarily and some permanently. It is necessary for us to face the facts. Unfortunately, those who need contraception most—the ignorant and the careless and the subnormal—are for obvious reasons least successful with it. Sterilization, as one answer to this need, is on the increase. In the criminal and mentally deficient, this may be done by process of law, but in other suitable cases it is offered and accepted as a relief from disability or as a life-saving measure. Since the methods have been simplified and used as a post-partum procedure, it is made more practically available. Dr. J. R. McCord expresses the belief that this is one of the principal answers to the obstetric problem.

Appendicitis has long been a close rival of childbirth as a cause of death, with approximately the same number dying each year from each of the two causes. The consistent rise in the mortality rates from appendicitis from 1900 to 1930 occasioned much comment and concern. During this period, the deaths from appendicitis nearly doubled. While there were certain offsets to these figures, such as a more correct diagnosis occasioned by more general hospitalization, still the situation was far from satisfactory. It is welcome news when we hear that from 1930 to 1937 the death rate from appendicitis shows a decrease of 28 per cent, and there is evidence that this decrease continues to the present. Most of these deaths are preventable, yet there is much comfort in the knowledge that progress is being made. Here, as in other conditions, the result often lies in the hands of the people themselves or the doctor who sees the patient first. The continued and repeated advertisement of life-saving facts to both of those groups is no doubt a factor in the improvement.

Cancer is still a major problem. There were 149,214 deaths in the United States in 1938 from

this cause. Of the 2,157 in the state of Virginia, 360 were cancer of the pelvic organs and 206 were breast cancers. We know the fact is that early diagnosis is essential to cure. A considerable proportion can be prevented by treating so-called precancerous conditions. If treated early, a high percentage may be cured by means now available. The recognition of wellknown early symptoms is important, but it is necessary to do more than this. Periodic examinations are necessary for early diagnosis as the case is often advanced before symptoms appear. This has been stressed repeatedly with little effect by the American Society for Control of Cancer and many other organizations. Apparently it remained for women to do this themselves. The Woman's Field Army within five years has been organized in every state in the Union for this purpose, and they appear to be making a good job of it; but it is still the problem of the medical profession, as individuals and as a whole.

Venereal disease control is a colossal undertaking of Public Health organizations; State, City and County Medical Societies; Foundations and philanthropic individuals. In syphilis, an era of real progress began in 1935 with Surgeon-General Thomas Parran's campaign to stamp it out. He got the problem presented in magazines and newspapers. Public opinion saw for the first time that there was a problem, faced it squarely, and slowly started to work. In five years, there developed active and effective clinics in all cities and many small towns and villages. Epidemiologists in syphilis, working with health departments, concentrated on finding the early cases and making them non-infectious. Industry and employers generally recognized the importance of requiring blood tests. This requirement has first informed many victims of their need for treatment. Approximately half of our states now have laws requiring examination before marriage. Such development of clinics, requirements of industry and legislation represent real progress in our never-ending fight for health.

The fight against tuberculosis has been most spectacularly successful. It has been moved from first place as a cause of death to a very respectable distance. These improvements have resulted, no doubt, from a tremendous and sustained advertising campaign and a widespread realization of its terrible devastations; together with the conviction among both the people and the profession that something could be done about it. It is undoubtedly one of the most expensive conditions to treat that is known, but this obstacle is being overcome by the appeal of the movement.

These are only a few of the many problems confronting the medical profession, the solution of which is so obviously necessary to the life, health and happiness of the people as a whole. While progress is being made with these, we have at times been attacked from within by antagonistic legislative efforts. The Wagner Bill, for instance, while it had some good intentions, was recognized as an instrument which would be a serious handicap to the accomplishment of these objectives. This, or any other legislation which would tend to take the leadership in medical matters from the medical man and place it with laymen would be destructive, and the profession will continue to oppose it.

At the present time, we, along with the rest of mankind, find ourselves faced with conditions which are unknown and unpredictable. The exigencies of war have always been the allies of disease and death. It is not difficult to foresee that the burdens of the medical profession will be great and progress may be slow; but, as in all times past, the doctor will continue to carry on.

LOCAL REST AS A THERAPEUTIC AID

(S. S. Povlin, New York City, in *Clin. Med.*)

Galen said "pain is useless to the pained." Except as a warning this is true.

The ointment known as nupercainal contains 1% nupercaine base and gives sustained anesthesia of abrasions of skin or mucous membranes, prompt and lasting relief from pain and itching.

Nupercainal, applied to relieve the pain, allows the formation of healthy granulation tissue and quick healing. Rapid healing of fissures in the breasts of nursing women has been obtained.

In cases of pruritus ani and vulvae, in ulcers, burns, and the like, I have found it satisfactory as a dressing following the suturing of wounds. Its prolonged anesthetic properties render it ideal in this type of work. It would appear that healing is accelerated by the physiologic rest thus provided.

MANAGEMENT OF CHRONIC ASTHMA

(R. M. Balyeat, Oklahoma City, in *Southwestern Med.*, Jan.)

In the average case epinephrine is the most efficacious and the least harmful remedy. The value of iodized oil should not be forgotten. In a small percentage of cases aspirin is of value. The use of aminophyllin, ether in oil per rectum, in glucose or sucrose intravenously, or a combination of all three, is life-saving in some cases. In the majority of cases of chronic asthma and bronchiectasis morphine is contraindicated.

In the treatment of the chronic asthmatic desensitization should be done.

In some cases of chronic asthma, especially those complicated with chronic bronchitis, or bronchiectasis, or chronic sinusitis, deep x-ray therapy over the chest and sinuses is worth while.

Most chronic asthmatics have a dual etiology; sensitization and mechanical factors, therefore, in outlining successful treatment both factors must be given careful consideration.

The Organization and Service of Hospital Unit O and Base Hospital No. 65

ADDISON G. BRENIZER, M. D., Charlotte, North Carolina

IN COLLABORATION WITH

FREDERIC M. HANES, M. D., Durham, North Carolina

THE people who stayed at home during the World War No. 1 have wondered at and given expression to the fact that the men returning from war had so little to say about it.

While it is true that ponderous events and experiences immediately affect one with such emotion that he does not care to repeat them even in thought, and only time makes a recitation of the events tolerable. There were other reasons why the men had so little to say: men, who were active during the war, were so concentrated on their particular task that they neither had the time nor the vision to look around and see the war maneuvers in other parts or as a whole.

This was so true during the very active period at Base 6, Talence, France, that Major Richard Cabot saw fit to inform us, and we were all well instructed by his weekly lectures, and charts, showing us what was going on.

The casualties arriving at Base 6 by the thousands and knew very little about the war, except the very small area over which they passed, before they were wounded. In fact, in the excitement of noise and activity of war, a great many did not even know when they were wounded.

The dough-boys did not realize that they were the only soldiers in France who yelled like wild Indians—or as they would have done at a football game, as they ran forward to meet the enemy, nor did they realize that in their excitement of pushing forward that they would throw away their pup-tents, their overcoats and even their rifles—their rifles—their only excuse for being there!

The first recovered casualties did see something of France, but later, it was necessary to picket the walls of the hospital grounds night and day and have the "shack-rousting squad" ever vigilant to prevent an overfilling of the venerable wards. There were wounded men who reached the base hospital, recovered, and returned to distribution centers, without having seen more of France than their immediate surroundings.

War does not make men better, it makes them worse. The extravagance of war, the recklessness of it, the concentration of men without their women, the shifting, temporary residence away from home, all tend to favor that feeling of uncertain restlessness. One might think, before he analysed the

psychology of this situation, that a man who had been wounded once or twice and was again about to go back to the front to be wounded again or be killed, would begin to reconstruct his morals. Not at all. His bent is in but one direction: a fling before he goes.

Again, we have just learned that the conscripted men are arriving at camp in various stages of intoxication, as if they were having their last chance at a drink. Unfortunately, this will not be their last. And there will always be Bacchus and Venus to serve them.

Phillip Gibbs wrote a book: "Now It Can Be Told." He didn't tell so much—one would not dare tell it all!

I am now breaking through the reticence or modesty, or whatever it was, that has bedumbed the recounting of experiences during the war with a brief history of Hospital Unit O and Base Hospital No. 65. Their stories have been inadequately told.

Those of us who took part in World War No. 1, the war to make the world safe for democracy, thought that it would, at least, be the last war. With the League of Nations about to police the world, the world in debt, mostly to the United States, with the feeling everywhere by everybody of everything lost and nothing gained, how could we think that any one who had sense enough to run a nation could allow his nation to go to war again? How could we think that there could be ten other little wars and the grand finale of a second World War?

We had felt that if they gave another war and did not invite us, we certainly would not get very mad about it!

Perhaps the buck-private in the army of occupation was right, when asked how long he expected to be over: "Until the end of the peace," was his reply.

Those of us who have seen the March of Time's: "The Ramparts We Watch," find it strangely reminiscent of 1916 and 1917 and decidedly nostalgic of those days just before we entered the war. Our feelings were aroused to a white-heat over the mere mention of the cloven-foot Hun, the Boche, die Schwein-hunde and the reported German atrocities. Our feelings must have been somewhat those of

the Crusaders of old; certainly the feelings of the doctor were that if the men could fight it out, little else could we do than look after their health and tend their wounds.

Just at this point should be cited, when reduced to simples for better understanding, the greatest example of man's insanity in allowing to take place one of the most preposterous situations one could possibly imagine: two men seeking to destroy each other by bullet, bayonet, fire or gas, and back of each is the doctor, ready to repair the damage and restore to fighting capacity not only once but any number of times. We have seen the same men repaired twice and sent back to the lines, to be finally killed outright. And for those who are interested in the cost: during the last war it cost \$25,000 to kill a man.

What can be wrong with the mind of man to allow him to be led up to and again take part in such a catastrophe! And this is man's own doings through his own free will, wherein he is showing himself, again and again, incapable of right thinking, or an equal-mindedness and control of his feelings in proper relation to his fellow beings. He cannot, alone, take care of himself, but with the very products of his genius and inventiveness seeks to destroy himself along with his possessions.

Is there an answer; is there a solution? Likely but one: the application of true Christianity. Man must have Divine guidance and a Savior of himself and his fellow-men. But, then, that would be the beginning of the Kingdom of Heaven on earth—yes, perhaps it would!

At this time of the year, 24 years ago, as now, we had not declared war on Germany; and President Wilson, as he had done during his first term, and now President Roosevelt during his third term, was going to keep us out of war.

We were going to be kept out of war; but already men were fighting with the allied troops, doctors, the Red Cross, ambulances and hospital sections were already being sent over, as now, on their missions of mercy.

Questionnaires, as now again, had been filled out by doctors all over our country; and some of us had already received letters from Colonel Jefferson R. Kean, then of the Red Cross, Drs. Jno. M. T. Finney and Joseph C. Bloodgood, who were prospecting and inquiring, only tentatively: "if we should go to war (not that we are going, but only in case) would you be available?"

When I speak for myself, I speak for most of the doctors. This was a difficult question for many of us to answer. I, for example, was running a private hospital, where I had staked my all to rent, improve and purchase. I had been married a few

years and a son had been born to us only a year before. Yet, there was but one answer to the inquiry, and that was a positive yes.

HOSPITAL UNIT O

There was a latent period of silence, longer than now, then, all of a sudden, after a chain of events with which most of you here are familiar, war was declared on April 4th, 1917. Three weeks after the declaration of war, the following telegram was received by Dr. Addison G. Brenizer from the Surgeon General's office.

"Assemble and enlist, without delay, the personnel of Hospital Unit O to embark for France by June 12th, 1917"

I visited the Surgeon General's office to find out what this really meant and was told that Hospital Unit O and two other such units were to be mobilized to substitute for French military hospital units exhausted of personnel and supplies.

The news was startling, since I had thought that my acceptance was contingent upon our entrance into the war and that these hospital units would move with our troops. Nevertheless, we were committed to war and we would be ready when called.

"Both the French and British missions, under M. Viviani and Mr. Balfour, respectively, then in our country, were keen to have American recruits to fill up the ranks of their armies" (Pershing).

"They were asking for one division to stimulate French morale 50,000 trained men for railway service and to work in shops and medical units" (Pershing).

General Pershing sailed for Europe on the Baltic on May 28th, and after traversing England, landed at Boulogne June 13th.

The personnel of Hospital Unit O was fully organized by June 12th.

My hospital was about to be closed, and its furnishings and equipment sold at one-fifth of their cost and the structural improvements were given to the owner in compensation for taking the building off my hands.

I again visited the Surgeon General's office the last of June, and found out that the order of April 27th had been rescinded on the advice of General Pershing, then in France.

As already stated, three weeks after war was declared, the organization of Hospital Unit O began at Charlotte, on the appointment by Col. Jefferson R. Kean, M.C., U.S.A., on recommendations of Drs. Finney and Bloodgood, of Dr. Addison G. Brenizer as commander of the unit. By June 12th the unit was fully organized and recognized by the War Department as Hospital Unit O.

We were not hurried away to France.

A month later the doctors were made officers of the United States Army; the nurses and enlisted men were not mentioned.

Receiving a commission is a grand thing in itself: receiving a commission with right to serve and receive pay, that is with all appurtenances, is a quite different thing. We had the commissions to be sure, as attested by a great scroll of parchment which said as much, and then, too, we had accepted it for what it was worth. Moreover, as evidence of good faith on our part, we had sworn away our young lives and promised to stick it out to "the end of the emergency" or to a time, a very indefinite time, determined by the "discretion of the President."

We knew also by these signs that we had rank; and some of us even had clothes to display it; but we couldn't wear them.

There was much talk and a unanimous vote of the officers of this organization (we had only twelve officers among an even dozen allotted to the unit, who really felt their respective responsibility for the command) was that I go to Washington and find out "where we stood" and if the War Department still recognized our existence. This was the first of August.

An officer in the S. G. O. did not want to give out anything officially; but he would tell me unofficially that if he were I he would close his hospital, and call on his gang, because the first three units organized were to be sent immediately overseas and that Unit O was one of the first ready. I thought I might not be presuming too much if I took this suggestion as an innuendo.

Whereupon, I returned home, gave out the news to the members of the unit and consequently to the town as confidential, but real stuff. I tried on my uniform and closed my hospital.

It was then, during July and August, 1917, that we actually returned to nothingness. We were neither doctors nor officers. We were merely "Unit O." The public had considered us as gone, and gone we felt; but we had no place to go. Our usually indulgent patients didn't want us and the army would not take us on it seemed.

Once more our officers met and this time decided we were everything implied by three blazen letters S. O. L., a term well known in the army, meaning simply "stranded or left," with, perhaps a connotation as well as a denotation. We decided, all of us, that I again go to Washington, but not alone and without witnesses.

One of the officials in the S. G. O. didn't know "when in the hell" we were going, but assured us if we were rearing for service he could send the officers to camp. He also suggested that, since we

were in the army, a little military training might not be inappropriate. It did seem reasonable. He then actually gave us our choice and left it with us as to where we would go. We decided, most naturally, that we would all like to go together to Oglethorpe.

It was in this way that, on September 15th, one of us was ordered to New York, another to Vermont, another to Georgia, two others to Pennsylvania and the rest to Tennessee. Would we ever come together again?

Left behind were our twenty-one nurses and fifty enlisted men, restlessly awaiting instructions while they tried to carry on their usual pursuits as lawyers, druggists, bookkeepers, stenographers, nurses, etc. The stenographers might have served me well in answering the correspondence from these people and their families.

Then came a series of significant orders:

The first order was received October 15th, while taking a course in the Carrell-Dakin method of treating wounds. "Major Addison G. Brenizer, M.R.C., is directed upon completion of his course at Rockefeller Institute for Medical Research, New York City, to report in person to Major Fred H. Albee, Post Graduate Hospital, New York, for a course of instruction in orthopedic work, and upon completion of this duty to proceed to Fort Oglethorpe, Georgia."

Then, November 8th: "Major Addison G. Brenizer, M.R.C., is relieved from his present duties at Fort Oglethorpe and will proceed to Charlotte, for the purpose of mobilizing Hospital Unit O."

The same date under separate orders the following officers were ordered to Fort McPherson, Ga.:

Captains James P. Matheson, William Allan, Robert F. Leinbach, Hamilton W. McKay and W. Myers Hunter from Charlotte; Captain Robert H. Crawford, from Rock Hill, S. C.; Captain Henry G. Turner, from Raleigh; Captain Marion H. Wyman, from Columbia, S. C.; 1st. Lieut. Archie A. Barron, from Charlotte; 1st Lieuts. Charles I. Allen and Jas. M. Davis, from Wadesboro.

All these officers were promoted to a higher grade before the completion of their duties except Captain Crawford, who voluntarily left the army on a Red Cross commission to Macedonia, with Captain Paul D. White, now a great Boston heart specialist.

November 10th under War Department authority, November 3rd—"The following enlisted personnel of Hospital Unit O, Charlotte, North Carolina, are ordered to active duty, and who are this date transferred to the Medical Department, National Army, will, upon completion of mobilization, under command of Major Addison G. Brenizer,

M.R.C., proceed without delay to Fort McPherson, Georgia, for the purpose of training and equipping command prior to duty overseas."

Then followed the names:

J. W. Sanford, J. B. Pharr, C. B. King, Jr., John F. Durham, A. P. DuLong, A. Irvin Henderson, Alfred S. Reilly, E. S. Reid, Jr., F. H. Medlock, Jr., B. H. Webster, W. J. Brown, E. P. Andrews, C. F. Brown, R. H. Harding, J. E. Corpening, W. F. Robertson, J. F. Swing, J. L. McAden, W. A. Davis, J. C. Moose, B. H. McGinnis—Charlotte; D.H.Terrell, Jacksonville; T.J.Covington, Wadesboro; R. M. Miller, Louisville; D. A. Tompkins, Edgefield; E. D. and A. B. Taylor, Winston; C. Howell, Cherryville; J. T. McCrorey, C. L. Whiteside, A. L. Young, Paul G. Anderson, Rock Hill, S. C.; Thomas C. Abernathy, C. B. Crowell, J. Frank Love, Lincolnton; Fred Johnson, H. S. Caldwell, W. M. Gibson, Davidson; John M. Barringer, O. M. Marvin, Statesville; John H. Wilson, Philadelphia; R. T. B. Little, Gibson, N. C.; Thomas L. Taliaferro, W. M. Osborne, New York; W. H. Branson, Lexington, Ky.; J. Foy George, Fort Worth, Texas; H. L. Everett, Laurinburg; Fred Field, Mooresville; Charles Glasgow, Lexington, Va.; Joseph L. McKnight, Orrville, Ala.; Norman W. Lynch, Bessemer City.

"Under the above authority the following named female nurses are ordered to active duty and upon completion of mobilization will, without delay, proceed to Ellis Island, N. Y., for training and proper equipment."

Then followed the names:

Mrs. A. W. Allen and Misses Margaret White, Catherine A. Ikard, Julia Colson, Cora L. Dearmon, Josephine Watts, Katherine Osborne, Elma Jones, Elizabeth Lowe, Elizabeth Hill, Edna M. Hill, J. M. Alderidge, Lula Lambeth, Macie Stanford, Sue J. Moore, Blanch Leonard, Bess Swearingan, Rose A. Downey, Charlotte; Sarah M. Harris, Concord; Gertrude Shepard, Atlanta; Harriett L. McCoy, Spartanburg, S. C.

Five of our men were lost to the unit at Fort McPherson. Dr. C. L. Whiteside, dentist from Rock Hill, after a spell in the hospital with fever and heart trouble, was allowed to go home on a furlough prior to his discharge and there he died suddenly of endocarditis. Caldwell Howell, of Cherryville, was left behind with meningitis, later recovered almost completely, but did not continue in the service. Dr. B. H. Webster, dentist, was transferred to the dental corps. John Wilson and E. S. Reid, Jr., were transferred to the aviation corps. With the exception of attacks of pneumonia passed through by Major R. F. Leinbach, Private William J. Brown; and Nurse Sarah M. Harris'

neck being cut by a negro patient in delirium, there was no serious sickness nor mishap to any one in the unit during the services of twenty-one months in this country and in France.

'Cording to orders, I saw the nurses off from Charlotte to New York early in the evening of November 15th and escorted the men over a night's ride to Atlanta, over beyond which city lay Fort McPherson. With fifty men dressed in civies, we detrained at the station in Atlanta, made our way in a body led by myself to the first street car pointing in the direction of the Fort. The street urchins were very annoying, wanting to carry posters and graft free tickets to the minstrel show. The street car dumped us before the gate of Fort Mack, as the conductor pointed it out to us. We entered the walls of that ancient fortification to stand a siege for three months. Confined to camp, more or less, we spent the time from November, 1917, to February, 1918, with many false alarms as to our leaving and repeatedly warned to be ready to depart for duty overseas.

On February 4th the "confidential order" came, ordering Units B, H, O and R, under the command of Major Addison G. Brenizer, to Camp Merritt, New Jersey. This was a "secret movement of troops," known to all our friends up in North Carolina, who met us at the stations as we passed through the State.

Just at this point of our chronology, the Charlotte Chapter of the Red Cross sent a fund of \$5,000 to Unit O. This fund was used and replaced frequently when the Quartermaster was not working. The large part of it was regathered from the Quarter Master and \$4600 returned to Henry McAden, then Chairman of the local chapter of the Red Cross. It was the sole means of feeding the men from supplies gathered from the French on the three days' passage from Le Havre to Bordeaux.

Our stay at Camp Merritt was short. On February 16th, amid clamor and confusion, we left at 6 a. m. for Pier 56, North River, New York, and arrived there about 8 o'clock. One of our officers was left sleeping at Camp Merritt and only arrived to join us after traversing New York in a "flivver" and arriving at the pier just as the boat was raising its gangway.

Our boat was the Cunard liner *Carmania*, which had already received 19 shots when she sank the German *El Trafalgar*, a pirate ship, near Trinidad. We were sailing at a bad season and just after the sinking of the *Tuscania*, sister ship of the *Carmania*. It was very cold. At Halifax the land was covered with snow, the water thick with blocks of ice. There we left behind Capt. R. F. Leinbach, ill of pneumonia, and came near losing Charles S.

Brown, who, returning from accompanying Capt. Leinbach to shore, was barely able to leap from the top of the tug on to our ship, as she was making rapidly out to sea.

We were seventeen days on the water, arriving at Liverpool March 4th. Then to Southampton and across the Channel to Le Havre and on to Talence, near Bordeaux, arriving March 16th.

After six weeks of travel, with short intermissions at so-called rest camps, and ending the final lap with a three-days-and-three-nights trip on a troop train, we were delighted to come to a halt.

Capt. Leinbach joined the unit several months later. At Southampton, where the streets were kept dark, no lights were allowed on automobiles and the rule is to turn to the left, two of our officers were run over by an automobile and painfully injured. Perhaps our most exciting adventure was our stopping at midnight in the middle of the English Channel following an explosion, which proved to be the engines out of order; and here we waited for two hours under such encouraging admonitions from the encircling torpedo boat as, "If you loiter around here much longer you'll get a torpedo through you!"

We shall never forget the day: Immediately after the arrival at Base 6 that wonderful lunch of beef, pommes frites, white bread, fromage, confiture and chocolate, the first bath and clean-up followed by a dance that night. North Carolina's reception at the hands of Boston was all we could wish, and before our final parting, after the war, many warm friendships had been developed between us.

Unit O was merged with the Massachusetts General Hospital Unit and, with the addition of casual officers, nurses and orderlies, formed the largest single Base Hospital in France—No. 6 located near Bordeaux on the line between the 18 miles of American docks and the whole Southern Sector and formed a hospital of 5,000 beds—3,800 surgical and 1,200 medical.

The personnel of Unit O was distributed over the surgical and medical services of the hospital. Major Richard Cabot of Boston was placed in charge of the medical, Major Addison G. Brenizer in charge of the surgical, service.

Base 6 (Mass. General Hospital and Hospital Unit O) sent several teams to the front; particularly active at the front were Major R. F. Leinbach and Capt. Robert H. Crawford. Capt. Crawford had already been over with a Red Cross hospital before we entered the war, and after the armistice went with Dr. Paul D. White to Greece.

Base 6 also staffed preoperative trains to aid by blood transfusion, operations when necessary en

route to bring the wounded in better condition to Base 6.

At one time before July 18th, 1918, the whole personnel of Hospital Unit O was about to be placed in charge of one of the four mobile hospitals at the extreme front. This transfer had been arranged with Lieut. Col. Geo. W. Brewer. Drs. Flint, St. John and Crile were directing the other three mobile Units, and it was arranged between Drs. Brewer and Brenizer for Dr. Brenizer to replace Dr. Brewer. This arrangement was interrupted by Major Gen. Shaw, who retained Dr. Brenizer and Hospital Unit O at Base 6.

BASE HOSPITAL No. 65

The original officer personnel of Base Hospital No. 65 was as follows:

Lieut. Col. John W. Long and Lieuts. Edward C. Ashby, Louis G. Beall and Capt. H. H. Ogburn from Greensboro; Major Frederic M. Hanes and 1st Lieut. S. W. Hurdle from Winston-Salem; Major Marshall H. Fletcher, Capt. A. T. Pritchard and 1st Lieut. Lewie M. Griffith from Asheville; Capt. James B. Bullitt from Chapel Hill; Capt. Sidney D. Foster from Toledo; Capt. John C. McNair from Mississippi; Capt. (D. C.) Henry O. Lineberger from Raleigh; Capt. Harry S. Noble from St. Marys, Ohio; Capt. James M. Northington from Minneapolis, Univ. of Minn.; Capt. (D. C.) George K. Patterson, 1st Lieut. John E. Wine and 1st Lieut. James T. Robertson from Wilmington; Capt. Jacob H. Shuford from Hickory; Capt. Alfred R. Warner from New York; 1st Lieut. Don D. Brooks from Connelville, Pa.; 1st Lieuts. Hugh E. Clark and Alvin C. McCall from Rocky Mount; 1st Lieut. Milton T. Edgerton, Jr., from Greenville; 1st Lieut. Amzi J. Ellington from Raleigh; 1st Lieut. Edward J. Engberg from St. Paul, Univ. of Minn.; 1st Lieut. Henry J. Gallagher from Boston; 1st Lieut. (S. C.) Harold H. Hultgren from Minneapolis; 1st Lieut. Mose M. Hyman from Detroit; 1st Lieut. Herbert F. Hunt from Boardman; 1st Lieuts. Thomas M. Stanton and Frederick R. Taylor from High Point; 1st Lieut. Samuel B. Sturgis from Lenoir, and 2nd Lieut. (Q.M.C.) Charles A. Johnson from Florida.

Most of the enlisted personnel of Base Hospital No. 65 was ordered mobilized at Fort McPherson in March, 1918, and Major F. M. Hanes was ordered there and assumed command of the organization. For the first two weeks at Fort McPherson the enlisted personnel was attached to Army General Hospital No. 6, and the experience in ward and kitchen aided greatly in preparing the newly enlisted men for the organization of their own Hospital Unit. The entire authorized quota of enlisted

men were not filled until May, 1918, and this proved a blessing, for recruits were added gradually to the detachment and easily assimilated.

The training of the Unit was handicapped by the lack of officers, since Major F. M. Hanes and Lieut. F. R. Taylor were the only officers of Base Hospital No. 65 ordered to duty at Fort McPherson. The officers of the Unit were in the various training camps and hospitals and did not join the Unit until June, 1918—three months after the Unit was mobilized. Capt. Northington, who had entered from the University of Minnesota, and was on active duty examining recruits to the M.R.C. at Minneapolis within a month of the United States' declaration of war, then being transferred to Base Hospital, Camp Dodge, Iowa, was invited to join this North Carolina group because of his previous practice in this State. In the meantime, officers of Base Hospitals No. 26 and No. 13, then in training at Fort McPherson, volunteered to assist in training enlisted men of Base Hospital No. 65, and their efficient help was invaluable.

The men made rapid progress in their training, and every department of a Base Hospital was organized. Fortunately, the enlisted men were of an unusually high type and no great difficulty was encountered in filling the clerical positions with well-trained men. Of course the work was entirely new and army paper-work unfamiliar to all, but the various demands were met and gradually a well-trained group of office men were developed. In this phase of the work advantage was taken of the opportunity offered by Col. Thomas S. Bratton, Commanding Officer of Army General Hospital No. 6, of sending men to the various offices of his hospital for training.

By dint of the constant and enthusiastic efforts of all the organization had assumed a roughly perfected form by June 1st, 1918. At this time the remaining officers were ordered to join the Unit, and during the next two months intensive training of men and officers proceeded.

Major Frederic M. Hanes was in command of Base Hospital No. 65 until July 24th, 1918, when Major C. S. Lawrence, M.C., was ordered to the command of the Unit. He was succeeded on July 27th by Major W. E. Butler, M.C., from Brooklyn.

On August 9th, Base Hospital No. 65 was ordered to Camp Upton, N. Y., and the months of hard but pleasant training were over. The organization had been treated with unflinching kindness and helpful consideration by all in authority at Fort McPherson, and the months spent there remain a happy memory.

Excellent travel accommodations were provided

for the trip to Camp Upton, and this was reached without mishap of any kind on August 10th.

On August 29th, at 4 a. m. Base Hospital No. 65 left Camp Upton for Hoboken, and by noon the organization was safely stored bag and baggage on the S. S. *Kroonland*.

One of the officers of Base Hospital 65 says the old *Kroonland* was not much to look at but a honey of a sailor. She was a Dutchman—good sea language if poor English—as you would gather from her name, and she rode very low in the water. A rumor had gone around that our C. O. of that date, the Brooklyn one, had said he, having special influence, had got extra good accommodations for our going across. When one of our waggish corps men got his first look at the *Kroonland* he announced: "It's a good thing Col. Butler had a drag, or all we'd have got would have been rafts and paddles." But the *Kroonland* was taking the rough weather like a duck in a mill pond, when two larger ships of our convoy were pitching so that not a stomach on board either could have kept anything in it but its lining membrane.

The trip across was devoid of incident, and landing was made at Brest the afternoon of September 13th. From this date until September 16th, the organization was in camp at Camp Pontanezen, just outside the walls of barracks built by the first Napoleon a few miles from Brest. Orders then came that the Unit would proceed to Kerhuon Hospital, four miles on the other side of Brest, and prepare it for the reception of patients.

Soon after arrival in France Lieut. Col. Hanes was detached for special duty in subduing an epidemic of influenza and meningitis at Pontanezen. Then he returned to Hospital Center Kerhuon as Commanding Officer, Lieut. Col. John W. Long having been ordered to special duty at Paris.

The history of Base Hospital No. 65 from September 16th, 1918, to the present (March 20th, 1919) is the history of Hospital Center Kerhuon; for Base Hospital No. 65 is the only Base Hospital that functioned as such at this Center.

Under the organization as a Hospital Center Major Northington was Director of Professional Services, these being three—Medical, Surgical and Psychiatric. Major Northington was succeeded by Capt. S. W. Hurdle as Chief of Medical Service; Major J. H. Shuford, and later Major H. H. Ogburn, became Chief of Surgical Service; while Major L. G. Beall became Chief of Psychiatric Service.

The following named nurses were attached to Base Hospital No. 65:

Bree Kelly, Chief Nurse, June E. Abernathy, Anna M. Alexander, Rose Allison, Mary M. Am-

bler, Lela E. Anderson, Evelyn Armstrong, Edith L. Bailey, Annie J. Bell, Mae F. Bengé, Blanch Bischoff, Jean P. Blue, Bess B. Bodenheimer, Lola J. Boyd, Mary Ione Branch, Irene Brewster, Katherine Burt, Hartley Butt, Lillian P. Britt, Dena Marie Boyce, Wilhelmina Collender, Alice B. Casey, Odessa Chambers, Helen M. Cleary, Clara M. Compton, Florence M. DeSautel, Gladys M. DeVenney, Rosalie A. Ferguson, Ella Fly, Ruby Fralley, Clara R. Fredere, Minnie R. Fritz, Sadie C. Gallagher, Anna K. Gaertner, May Greenfield, Ada Estelle Harris, Myatt Herndon, Bessie Hooten, Ethel Hughes, Marjorie Ide, Caroline Johnson, Gaye Johnson, Pearl A. Johnson, Helen A. Johnson, Betty Johnson, Lucy Jones, Daisy E. Kinsland, Mable A. King, Rose E. Kliment, Hildur A. Laconius, Louise G. Livingston, Rachel G. Loman, Betty E. Manley, Bess A. Manley, Margaret E. MacLellan, Sue M. McNeill, Florence MacKenzie, Emily Morton, Mabel Niblock, Bert C. Nichols, Anna H. Osback, Esther E. Oswood, Ada F. Paige, Letitia Payne, Sarah Pennington, Pearl Phifer, Maude E. Pierce, Harriet J. Poole, Mabel Potts, Bessie D. Powell, Allie Reavis, Elizabeth K. Richards, Harriett E. Roddey, Pauline Robinson, Nova R. Rogers, Bertha L. Rose, Effie N. Sassar, Sara L. Satterfield, Gwendolyn J. Scriven, Elizabeth M. Sears, Clara Belle Smith, Frankie Smith, Minnie Staley, Bertha Steele, Grace F. Stevens, Alexandra T. Stewart, Haldis Sundre, Caroline Tillinghast, Mamie L. Timberlake, Myrtle Truell, Loma C. Trull, Pauline D. Troch, Mamie Ulrich, Elizabeth Water, Lillie Ruth Wicker, Isabel Williams, Jessie K. Willson, Annie Yow, Gertrude Falkenhagen (Dietitian), Hilda Larson.

The version of the nurses attached to Base Hospital No. 65 of their activities was as follows:

"We were mobilized at one of the nurses' bases in New York City, and from there went in a body to France and united with hospital forces at Brest.

Twenty-two hundred desperately ill patients were brought in before the barracks were ready. There were no electric lights, only oil hand lanterns and flashlights were available. The nurses wore hip boots and waded in slush from building to building. One hundred and two nurses took care of this large number of sick and dying soldiers. Many types of diseases as well as wounds were treated, among which were influenza, pneumonia, pleurisy, cerebrospinal meningitis and insanity. In October, 1918, the Chief Surgeon of the American Expeditionary Forces called upon Base Hospital No. 65 for two operating teams to be sent to the front. This was a hazardous duty and called for highly trained women. Dr. Long selected two North Carolina nurses to do this work,

and they spent many weeks of active service on the firing line and within sound of the big guns. The work done by this unit has gone down in the history of the War Department as one of unexcelled value."

Here are interpolated extracts from Sergeant Wallace Hoffman's sketch of B. H. 65:

The 3- $\frac{1}{2}$ mile hike leisurely done brought us to Napoleon's old barracks at Pontenezan just outside of which we found the tents we were to occupy as our alleged rest-camp. Sleeping on duck-boards to keep out of the mud, and being able to take off shoes and leggings and breeches to go to bed seemed a great luxury.

Most of the men would say we spent a long time at the rest camp; but it was only three nights, as on the afternoon of September 16th, having been under pack and waiting for transportation since early morning, the trucks arrived and took us from Pontenezan to our brand new hospital at Kerhuon.

Here were many new and half-finished and just-begun barracks and we carried beds and were issued lots of blankets to put on the springs, and for the first time since leaving Upton those who did not have to be up with patients could sleep in comfort.

The work of equipping the wards with all the material available from the supply station—carrying beds, mattresses, blankets, tables etc.—went forward rapidly. The nurses were with us for the first time, and soon we had 2800 beds available for patients. Eighty-one men were sent down to Pontenezan on detached service to help in the emergency with influenza and meningitis, and received their first real experience in the work they were to do. Soon recalled to Kerhuon as patients began to arrive with rapidity and we were soon full to limit.

At first the work was almost entirely with sick arriving from U. S. As Brest was entrance harbor for many convoys, our death record showed the coming of ships. During October at the height of the influenza epidemic, with the rush to get men over we had greatest mortality, 66 in one day, and for the month 585.

Nurses, officers and men were added and the Hospital expanded until it had an enlisted personnel of 1200 and 4200 beds for patients; and many officers from other groups served with us. Col. Clyde S. Ford, of the regular Army, now came to us as commanding officer.

With November we were covered up with work, and then came the Armistice, with its great rejoicing, and the knowledge that in the changed conditions we would not have to salvage the men wasted

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Antithetical Views on Twinning Found in the Bible and Shakespeare

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PART I

THE EDITOR of the *Lancet*¹, in commenting on a previous paper² of the authors, makes an estimate of the Bard of Avon which is couched in such inimitable English that we cannot forbear quoting from it.

"Shakespeare" says he, "was such an admirable observer that he tempts us into believing him omniscient, but he was first and foremost a dramatist with an eye for a situation and he knew what he was about. He used his knowledge as a cook uses thickening in gravy, but the structure of his plays was dramatic, not scientific." We will admit that we have yielded to the temptation alluded to not only in this study but even more frequently in a work on Shakespeare's knowledge of Laterality Dominance something on which we are presently engaged³.

Shakespeare wrote at a time when the instrumentality of science was at a bare minimum. We might retort to the distinguished editor from whose words we have quoted, that the dramatist's reflections upon, and observations of, human ills, weaknesses and efforts both spiritual and mental could be molded by the proper hands into a treatise which would far exceed any abstract scientific thesis of its time. What may have added to our confusion in the matter is the projection of the dramatic in these matchless plays into the foreground while the uncanny qualities of his more human analyses lurk in the background.

Many of Shakespeare's plays portray characters living in a Christian world. They are shown attempting with various degrees of success to adhere to the Christian way of life. Their lives are rewarded or punished according to the dictates of an authority which stems from the Scriptures. The playwright expresses a philosophy which is essentially orthodox. This makes it all the more surprising when we have occasion to note the manner in which he views the broad subject of twinning. Here he is at variance with the Hebrew philosophers. The products of twin conceptions in his plays are always people of the highest type. The Jews sur-

round such rare events, rare in the sense that they are infrequently described, with an unmistakable aura of tragedy. To them misfortune is shown as following the footsteps of such human beings; to such an extent as to foster the belief that such descriptions are brought into the narrative with deliberate intention.

Twin births are told of twice in the Old Testament while the New Testament contains only references to these past events. These references brief in extent only serve to accentuate the bleak regard with which such happenings were viewed. In the several allusions to the earlier events brought forth in the New Testament there is nothing to suggest that the Christian writers had in any manner changed their point of view. Indeed the impression received from the entirety of such a study is that twin births were surrounded with tragic happenings which wrecked the lives of many of those who participated in the scene. They are only mentioned to remind us that misfortune followed them. The repetition of such advices in the New Testament make this impression all the more convincing.

In the long lists of children born under the old regime, lists which sometimes run without interruption in the text through many chapters of the earlier books in the Bible, there is not to be found a single reference which would lead us to a contrary belief. No instance of twinning is brought forth in which such happenings were followed by peace and the drawing closer of natural family ties.

As will be described later in one instance at least, Jacob, the second born in a twin pregnancy disrupted the blessing of his elder grandson in favor of the younger grandson. He did this deliberately despite the spoken objections of the child's father, Joseph. In doing so one judges from the text that he was perpetuating an injustice which was against all Hebrew precedent at that time and was objectionable to those adults who took part in the ceremony. This proceeding, which is surely one of the most moving in the Old Testament can, we

feel, be read only in the light that Jacob or Israel as he was then called, was bent on repeating a formula which, with the connivance of his mother, Rebekah, he had perfected in his youth against his twin brother, Esau. We might assume also that the selection of the younger son Joseph, as the head of the family on the death of Jacob, which led to the displacement of his older brothers, Reuben and Benjamin among them, was a deed of the same caliber.

The tragic story of the strife between Jacob and Esau is ushered in almost immediately after their mother, Rebekah discovered she was with child. Rebekah, who was the sister of Laban, the Syrian, a point which was of moment in the later life of her favorite son, Jacob, married Isaac when the latter was forty years of age. At first she was barren. The narrative describes how she became pregnant due to the intercessions of her husband with the Lord. The struggle which was to continue later between the two youths began within her womb.

Genesis 25: 22 and 23

"And the children struggled together within her, and she said, If it be so why am I thus?

And she went to inquire of the Lord."

"And the Lord said unto her, Two nations are in thy womb, two manner of people shall be separated from thy bowels, and the one people shall be stronger than the other people and the elder shall serve the younger."

This manner of advice may have determined all her latter actions in the tragedy which shortly disrupted her family. Whether that was the determining power of her decision or whether she was repelled by Esau's appearance we do not know but from the moment of her twins' birth she became the active partisan of the younger one, Jacob. At the time of parturition Jacob was found holding to the heel of Esau. The implication, the reason why this particular is mentioned, we believe to have been founded on the belief that Jacob was attempting to prevent his brother's appearance in the outer world. At once the family became divided. Isaac loved Esau but the mother adhered to the younger son. While they were still youths Esau, in a sudden fit of hunger and weakness, sold his birthright to the other boy. This, obviously however, was a contract without merit; only a preparatory scene to the more tragic one which followed. The father must first be deceived before the agreement became valid. Meanwhile the inheritance became a great one, so great indeed that Isaac was ordered to leave by Abimelech, in whose country and under

whose protection he was then living, with the words, "Go from us for thou are much mightier than we."

When Isaac had grown old and his eyes could not see, the mother and the younger son decided that the time for the deception had come. The manner in which the old man was imposed upon has been told many times. In this deception the mother and the younger son played equal parts. "The voice is Jacob's voice, but the hands are the hands of Esau." The consummation of this deceit brought about a decision on the part of Esau to kill Jacob. His mother learned of this and sent her favorite out of the country to her brother, Laban, the Syrian. Here he lived for many years with the threat of murder hanging over his head. Later in life when a meeting with his brother Esau became inevitable Jacob had many misgivings as to the outcome. He seemed under the impression that Esau would kill him on sight and prepared his belongings in such a way that much would go to his brother as a gift of appeasement. As he himself stated the case, "I will appease him with the present that goeth before me, and afterward I will see his face, peradventure he will accept of me."

The thirty-second and thirty-third chapters of Genesis are taken up with the description of the wrappings of Jacob with his conscience and his fears at the prospect of the coming meeting. Not the least impressive portion of the narrative is that which describes his emotional storm when, to his evident surprise he found his brother, Esau, in the spirit of forgiveness. Jacob expected death and he met with generosity. The crime which he had committed against his twin brother was the factor which divided the family of Isaac and Rebekah. The fraternal strife which resulted led to the flight of the younger son under a threat of murder. A crime which would have been consummated but for the vigilance of the mother, Rebekah. The resulting series of events, tragic in character, embraced the flight of Jacob into strange lands where he spent his life among strangers, the estrangement of Esau from his father and mother when he wed against their wishes. Jacob seems to have spent most of his early days under the constant fear of murder, a crime which we judge from the context would have been justified in his own eyes. That his brother was, in the end, willing to forgive and forget aroused an emotional storm in his own soul which gives us an indication of how great his own injustice appeared in his own eyes.

Later in the Old Testament (*Hosea*, 12: 2) it is recorded that "the Lord will punish Jacob according to his ways. He took his brother by the heel in the womb and by his strength he had power

with God."

Nor does Esau seem to have been regarded as blameless in the controversy. (*Obadiah* 1: 10) "For thy violence against thy brother, Jacob, shame shall cover thee and thou shalt be cut off forever."

The same strain of thought is continued in another of the elder prophets.

Malachi 1: 2; "Was not Esau Jacob's brother saith the Lord. Yet I loved Jacob and I hated Esau and laid his mountains and heritage waste for the dragons of the wilderness." Nor is there any softening of the regard in the New Testament as we find in *Hebrews* 12: 16 and 17.

"Lest there be any fornicator or profane person as Esau, who for one morsel of meat sold his birthright. For ye know how that afterward when he would have inherited the blessing he was rejected, for he found no place of repentance though he sought it carefully with tears." The air of tragedy still persists in another quotation from the New Testament, *Romans* IX: 10 and to follow.

"And not only this but when Rebecca also had conceived by one, even by our father Isaac. (For the children being not yet born, neither having done any good or evil, that the purpose of God according to election might stand not of works but of him that calleth). And it was said unto her the elder shall serve the younger." "As it is written Jacob have I loved but Esau have I hated."

The tragedy of the twin birth of Jacob and Esau seems capable of arousing hatred not only in all who took part in it but in all commentators as well. Both in the Old Testament and the New the story serves to call forth expressions of reproach. More than once as we have seen it has served as a text to put upon display something which merits nothing but disapprobation. The one twin or the other seems to have been held responsible for all that afterward befell. The only redeeming feature in the entire narrative, the whole-hearted forgiveness by the wronged Esau of his younger brother, alone seems to have been neglected. We cannot help but feel that this series of allusions and implications informs us that to the ancient Jews, the act of twinning, whether or not it was bound up in the inheritance of property was something which they could very well do without.

The only other story of twinning contained in the scriptures occupies in its entirety the 38th chapter of *Genesis*. It concerns itself with the tragic intercourse which took place between Judah and his daughter in law, Tamar. It is of interest to note that Judah, who played the leading part in the drama and the father of the illegitimate offspring of this union was himself the son of a twin,

Jacob. His mother, Leah was introduced into the bed of Jacob at the wedding feast which was supposed to celebrate the marriage of Jacob and Rachel. After this act of deception by Laban Jacob agreed to labor seven years more for Rachel.

The descriptions of these two tragic series of events fall into each other aptly. Each one is a story all its own yet bound together within two generations of a family which has the distinction, if we can call it such, of bearing the only two sets of twins mentioned in the scriptures. The inference may be that the narrators had this in mind and used each separate chapter to make more manifest their idea, racial in character, that twins and their bearing denoted something which was reprehensible.

Judah who was the fourth son of Leah and Jacob, married a Canaanite woman named Shuah, who bore him three sons. The father selected a wife named Tamar for his first born son, Er. The first husband was slain by the Lord. Judah promptly commanded his second born, Onan to wed Tamar. Onan, whose name has been made a word in our own language, rather than impregnate his brother's widow spilled his seed upon the ground. He met the fate of his brother, Er. Tamar, at the suggestion of her father in law, withdrew to her father's house until the third son, Shelah, should become nubile. "Lest" in the words of Judah, "peradventure he die also as his brethren did." Tamar became aware that Judah did not intend to complete his bargain and dressing as a harlot waylaid him as he went to Timnath to shear his sheep. She covered her face after the habit of her class and sat in an open place. All unknowing that he was approaching his daughter in law Judah made overtures to her. She consented but took first from him his pledges his signet, his bracelets and his staff.

After this incestuous union was consummated Tamar returned to her father's house bearing with her the precious pledges. Three months later Judah was informed that his daughter in law had played the harlot and was pregnant. Judah commanded that according to the law she should be brought forth and burned to death. Before the sentence could be carried out she sent a message to her father in law with the pledges she had exacted before the intercourse had taken place. This was the message.

"By the man whose these are am I with child. Discern I pray thee whose are these, the signet, the bracelets and the staff." Judah acknowledged the justice of her claim with the words "She hath been more righteous than I, because that I gave her not to Shelah, my son." When the children

were born, the hand of one appearing, the midwife attached to one of the fingers a scarlet thread, saying, "This came out first." But in the struggle to appear in the world the other child won and was born first bringing from the midwife the outburst "How has thou broken forth, this breach be upon thee." The latter incident reminds us of the events which took place when Jacob and Esau were born; the manner in which Jacob clung to Esau's heel.

The whole narrative reeks with violence; the sudden deaths of Er and Onan, the deception practiced upon Tamar by her father in law, Judah; the manner in which Tamar, to obtain revenge, played the part of a prostitute; the incestuous union which followed; the threat of a shameful death and what must have amounted to the disgrace of a prince of Israel. With twinning the scriptures do not further concern themselves. We think enough has been said to foster the belief that these stories were told with a purpose and that there is a bond which holds these two narratives together. In any event, so far as the Old Testament is concerned, the only impression one can obtain is that tragedy hovers over such events and that such bringings forth are surrounded with forces which disrupt family life and threaten the well being of all who take part in them. No word could be found to ameliorate these impressions in any other part of the Bible. The implications we believe to be unmistakable.

We have difficulty in even hazarding a guess as to upon what the evident distaste of the ancient Jews toward twinning was founded. We may take it for granted we think that the belief that one twin acts against the well being of the other is almost as old as humanity. That this antagonism shows itself by an attack on the sexual potency of one of the partners by the other seems to be widely held by the people at large. When Newman and his associates at the University of Chicago were preparing their book on *Twins & Twinning* a large correspondence was entailed with the people of the Middle West.

This was made necessary by the attempts of the authors to persuade numerous pairs of twins to come to Chicago for the purpose, among others, of determining the value of the factors of nurture and nature⁴. Many of the letters addressed to Newman took the form of queries and he records the fact that the one relating to the impairment of the sexual potency of one twin by his birth partner was the form of question which most frequently became apparent. To the Jews, a nomadic and warlike tribe, the matter of sexual potency among its people was a very important one. The

bearing of many children by a couple were events eagerly sought for. Barrenness was viewed as a curse or something even more unfortunate. It is quite possible that the Jews held views in these matters similar to those that we find so frequently today, that one twin is apt to be impotent or sterile, and this may have been one of their reasons for their evident antagonism toward the phenomenon of twinning. There is nothing in the scriptures to indicate a belief in the occurrence of free-martiny among human beings. Unless it is by implication.

In the two sets of twins which we have described the sex was similar in both pairs of infants; Jacob and Esau being boys, as were Pharez and Zarah, the sons of Judah and Tamar. The impairment of the sexual growth of a female infant born twin to a male by the suppression of her sexual hormones due to their comparative later development does not enter into the question. This statement is made with knowledge of the fact that the question of human free-martiny has never been adequately affirmed or denied⁵.

This point of view is similar to that which we hear expressed by the present generation. Among the laity free-martiny is a term which is unheard of. The question of sexual encroachment is founded upon a conception which embraces twinning as a whole regardless of the sex of the children. Indeed the fact that the children are of the same sex seems to be considered as an ideal situation to make this theory active. This is true whether either boys or girls are involved. The means by which such fanciful events transpire are not even hinted at but that the idea is widely held is self evident.

A woman has recently informed us of events which took place in the family of her husband which makes the point clear. Her mother in law was one of twins. From what we have been able to unearth one of identical twins. She bore seven children. Her twin sister went through a long married life with an active life partner without ever becoming pregnant. No attempts were made so far as is known to avoid such happenings as the wife was eager to bear children. Our informant remembers hearing the matter discussed in the family circle and the conclusion reached that as one twin became more fruitful the chances of her sister to become a mother became increasingly more remote. It was, she told us, accepted as a matter of course, what might be expected; as one unit of the twinship had absorbed all the reproductive powers of the twain. The barren wife, who was well aware of these conversations must have at length resigned herself to her fate. Whether any

sense of injury was ever felt is unknown as the two women remained devoted to the end of their days. It seems to be a fact that many people have been made aware of this solitary facet of tradition regarding twinning to the exclusion of all others. We have not been able to find any statistical figures regarding the child bearing performances of twins of the same sex. At the present time when so much time and effort have been expended to curtail offspring any such information would be of doubtful value. This is particularly true when we consider that such a search would have to be made among the better educated of the community where the practices of contraception have made their greatest strides.

Nowhere in either the New or the Old Testament can be discovered any instance which would guide us to discern just what the knowledge of the ancient Jews may have been regarding the accidents which we now believe accompany the events of multiple pregnancies. We may rest assured we think that a race so avid of sexual knowledge and so eager to increase the number of the tribe may have become aware of some of these happenings.

They were realists, able to weigh against each other the advantages or disadvantages of such affairs. Shakespeare looked upon the problem of twinning with an indulgent eye. The spectacle of two human beings bound together in a mutual love and understanding which transcended, was deeper, than any other form of mortal relationship, fascinated him. As we judge from the reading of *The Comedy of Errors* and *Twelfth Night* he was anxious to translate his viewpoint to the world. Not so the Ancient Jews. Just why is purest speculation but we may presume that knowledge under the following heads may have been disclosed to them through some primitive form of examination and analysis.

1. Twin pregnancies were not only more apt to result in abortions fatal to either or both the embryos, but the intrauterine struggle for such existence resulted in the weakening of one child and its frequent mutilation.
2. Twin pregnancies, if carried to term, were a greater hazard to the life of the mother and created obstetrical complications which took their toll.
3. The sexual potency of one partner might be seriously impaired. A vital factor in a tribe which carried on almost incessant warfare.
4. Twin pregnancies led to deformities in one or the other of the children; six fingers, six toes, and so on.
5. The occurrence of twins was an unnatural happening per se.

6. The occurrence of twins led to the increase of left handed people. This in itself was a great disadvantage in war like tribes where universal military service was a matter of course. That the Jews, supposed by many to be a left handed people nevertheless held this condition to be a curse, is the only conclusion which can be obtained by reading the scriptures. The statements making this plain occur over and over again.

The undesirability of twinning with its resultant production of mancism must have early become apparent to the Jews who engaged in constant warfare not only for conquest but for their self preservation. It would be only with great difficulty that a left handed recruit could be taught to use his sword or spear with his right hand. At the best such soldiers could have presented but vulnerable targets for their more skillful adversaries. That this state of affairs was recognized by the ancient Hebrews and was made use of with great intelligence is made apparent to us from the passage *Judges* 20: 15 and 16, which has been frequently quoted.

"And the children of Benjamin were numbered at that time out of the cities twenty and six thousand men that drew sword besides the inhabitants of Gibeah which were numbered seven hundred men.

Among all this people there were seven hundred chosen men left handed; everyone could sling stones at an hair breadth and not miss."

The militant Jews we would understand from this passage were able to take advantage of an apparent weakness and turn it into a military asset. The proportion of left handedness occurring among twins, being nearly half of those involved, might have induced the Hebrews to look upon its occurrence with disfavor if only from the viewpoint of the martial world. Be that as it may the glorification of the right side of the body and the corresponding condemnation of the left side might almost be considered one of the religious beliefs of the writers of the scriptures so frequently and with such thudding force is it applied.

All this despite the fact noted by Newman⁷ that one of the Apostles, St. Thomas, was referred to as "Thomas which is called Didymus," the latter word being the Greek word for twin.

We have been unable to find any evidence which would point either to the right handedness or left handedness of St. Thomas, to whom we have referred. From a survey of the scriptures which the authors have just completed, however, we can state that both the Gospels of St. John and St. Luke bear reasonable proof of the left handedness of

Simon Peter. From a study of the Koran⁶ with reference to laterality dominance we have concluded that there is very definite indication that Moses suffered from at least one of the defects frequently associated with mancism.

Newman⁷, in reviewing the objections to twinning entertained by some of the primitive peoples brings out a point of even more importance. They are objected to by such congregations, it would appear, because they are looked down upon as reversion to the animal or litter type of bearing young. This robs the parturition of something which is obtained in the case of singletons; a pride in its essential humanity. An event which was believed to be inherent in the annals of man alone. Whether this viewpoint influenced the ancient Hebrews is a matter of pure conjecture but it may have played its part.

That Shakespeare was well acquainted with the scriptures both old and new and with the book of Common Prayer of The Church of England has been known for centuries. The dramatist's knowledge in this respect has been the subject of many searching analyses. The common verdict has been that not only was his acquaintance with the Bible intimate and extensive but that it was applied with great distinction and accuracy. So much so that his plays were made richer or of deeper import to those whose knowledge of the scriptures equalled that of the author himself.

It has only been of recent years that it has been discovered just how frequently he makes use of biblical allusions. This is so as Richmond Noble⁸ points out because only too often the incidents for a comparison are mentioned but the biblical personality itself receives no further identification. It is as if Shakespeare had presented something which might be enjoyed, not depending upon the cultural level of the reader. Where and when Shakespeare gained this type of knowledge is not know. It is most unlikely that it was obtained in his childhood. Noble remarks that whatever minor mistakes Shakespeare made in his biblical allusions and paraphrases became increasingly less frequent as he grew older. From this it is deduced that his store of scriptural knowledge was gained after he had reached maturity and went *pari passu* with his dramatic skill, which showed marked improvement as time went by. To refer to Nobel again, it is believed that Shakespeare made in his plays identifiable quotations from or allusions to forty two books of the Bible. Of these Books eighteen each came from the Old and New Testament and six from the Apocrypha.

PART II

IT HAS BEEN SAID of Shakespeare that his point of view is artistic and not scientific. This is brought out in his attitude toward twinning. He is interested in the finished product. He sees in this everything that is admirable. Sharply contrasted with the biblical view he disregards the obstetrical tragedies which so often complicate the lives of twins and their mothers. He feels that these are matters which do not concern the playwright. The latter deals only with those comparatively rare instances of multiple pregnancies which have emerged unscathed from their terrible ordeal. The idea that they should reflect either in body or soul the desperate struggle for existence which surrounded them in their time of intra-uterine life is abhorrent to him. To him they are superior beings and must not ever show by act or by appearance the scars of fraternal strife.

It is most likely that Shakespeare knew little of the hazards which surround the early life of twins. Certainly he never indicates by a single word that such human beings would be likely to display deformities which might make them repulsive to beholders. All that he sees is a pair of human beings, either of the same sex as in *The Comedy of Errors* or of different sexes as in *Twelfth Night* going on their several days united, bound together by that rarest form of human affection which places the well being of another above one's own. Viola and Sebastian. Antipholus of Ephesus and Antipholus of Syracuse have one great gift in common; they love their twins with an almost unearthly love. Throughout the tragic and comic scenes which make up these two plays, the love of these four people for each other shines like a lode star. Indeed the dramas themselves seem to be a background which displays in varying forms the superiority which twins have over singletons in this life we all know, and the depths of the emotions which mutually endear the one to the other. Other characters of Shakespeare's may be derelict in their duties, may shirk and disappoint us; but his twins never. To the final dropping of the curtain they remain, as from the first, happy in the dedication of their lives to their birth companions.

It is a fact of interest that in both Shakespeare and the Bible we find the matter of twinning treated twice over on a grand scale. It would appear that on each occasion, the matter was brought up with the intention of pushing home a point. In the Old Testament, Jacob and Esau are held up to the public consciousness and all that surrounds their

lives is brought forth in pitiless detail. As if the narrators felt that the story could not be fully told in one sitting, Judah and Tamar and their derelictions are brought forward again as a final and terrible chapter on the subject of twinning. Thenceforth in the Old Testament the matter is brought forward no more. Twinning is never mentioned again.

Shakespeare tells the tale of the devotion of the Antipholi to each other in *The Comedy of Errors*. In *Twelfth Night* he again plays on his theme. This time, however, in the manner to let us know that not only are twins of the same sex superior and devoted beings, but when we find them of different sexes the emotions which provoke our admiration are even more fulsomely displayed. Whatever the reason may be the people of our day have gone along with the Immortal Bard. They too look upon twins with unmixed affection. Though the knowledge of what such multiple pregnancies may mean for both the embryos and the mothers is becoming more widespread it has not affected the popular idea so far as we can ascertain regarding the twins themselves. Such matters are quickly forgotten.

Even the suspicion that one twin may make havoc with the sexual development of his fellow seems to be lightly regarded, even by the ones most intimately engaged in the matter. Just why we have turned away from the warnings of the ancient Hebrews and have followed the philosophy of an Englishman of the Seventeenth Century we do not know. That the writings of the playwright have influenced us to some degree is probably true. He has affected so many of our viewpoints that we presume here also his word has been potent even though it may be difficult to to define it, as to degree.

In addition to the two plays, *Twelfth Night* and *The Comedy of Errors*, Shakespeare touches on the subject of twinning in several of his other compositions. In this he differs from the Scriptures, with which his works have been so often compared. In each instance a careful reading convinces us that his attitude is invariably the same. Whether the mutual affection of twins is stated directly or by comparison with animals occupying other development levels, or by the analogy of comparison with inanimate objects as is done in *Henry the Eighth* the inference follows the same pattern. Twins to Shakespeare occupy a place in his regard, high and without rivals, to use a word of which he was so fond and which he frequently employs, they are something to *conjure* with.

The minor references to twinning vary greatly in significance and value, several of them embody

merely the use of the word twin. In *Henry the Fifth*, Act Four, Scene One, Line 251 occurs an instance of this sort. In *Anthony & Cleopatra*, Act Three, Scene One, Line 12 another. And a third appears in *The Merry Wives of Windsor*, Act Two, Scene One, Line 74. There are however, several employments of the picture we have under description which makes plain we believe the unchanging admiration which buttresses the author's viewpoint. One of these latter appears in the tragedy of *Coriolanus*. As the story progresses to its inevitable conclusion Coriolanus is driven from Rome by an edict of exile. In his bitterness of spirit he seeks an alliance with his ancient enemy, Tullus Aufidius, General of the Volscians. Him he finds in Antium about to feast his nobles. Coriolanus, who is in disguise seeks direction from one of the natives and pauses to soliloquize before he enters the house of Aufidius.

Coriolanus

Act Four

Scene Four

Line XIII

O world, thy slippery turns;
Friends now fast sworn
Whose double bosoms seem to
wear one heart
Whose hours, whose bed, whose
meal and exercise
Are still together, who twin, as
'twere, in love
Unseparable, shall within this hour
On a dissension of a doit, break out
To bitterest enmity; so, fellest foes
Whose passions and whose plots
have broke their sleep
To take the one the other, by
some chance
Some trick not worth an egg,
shall grow dear friends
And interjoin their issues.
So with me:
My birthplace hate I, and my
love's upon
This enemy town. I'll enter;
if he slay me
He does fair justice; if he give
me way,
I'll do his country service.

These lines are worthy of note for several reasons. First, the prime purpose of their repetition is to call attention to the manner in which the closest form of human intimacy is described to justify the use of the word twin. This is in keeping with all other similar references. Another point of note, the manner in which the word is used as

a verb. Needless to say this has long since gone out of vogue. Shakespeare frequently so employed it. Most noteworthy of all is the line

"Whose double bosoms seem to wear one heart."

Wittingly or otherwise Shakespeare here defines with exactness a condition all too common in multiple pregnancies wherein there is but one heart to two bosoms, the heart of one of the twins having ceased to exist (acardiacus.) We must absolve the author of any such knowledge of the pathology of twin conceptions. Such a state of affairs would have been highly unlikely in that day and time. We submit, however, that the expression, particularly in connection with the background of twinning is a most remarkable one of which to make use. It would seem most improbable that Shakespeare could have known what an acardiacus was.

There is a brief recurrence of twinning analogy *Othello*, Act Two, Scene Three, Line 200—Othello retiring for the night with Desdemona in the castle in Cyprus is much concerned over the setting of the watch. He pauses for a moment to remind Cassio of the importance of the matter. Cassio informs him that though Iago has charge of the watch, he, Cassio, will look to it with his "personal eye."

Later in the evening Iago, having succeeded in making Cassio drunk to further his own ends, makes such a disturbance that the castle bell is set ringing and in the middle of the riot of sound and fighting Othello makes his appearance. He has difficulty in discovering just what is underway, but he makes his intentions evident in the following Othello

Now by heaven

My blood begins my safer guides to rule
And passion, having my best judgement
collided,

Assays to lead the way; if I once stir,
Or do but lift this arm, the best of you
Shall sink in my rebuke. Give me to know
How this foul rout began, who set it on
And he that is approved in this offence
*Though he had twinned with me,
both at a birth*

Shall lose me. What in a town of war,
Yet wild, the people's hearts brimful
of fear,

To manage private and domestic quarrel,
In night, and on the court and guard
of safety;

'Tis monstrous. Iago, who began it?

Iago has incited a fight between Cassio on one side and Roderigo and Montano on the other. Iago instructs Roderigo to go outside and cry a mutiny. After the bell starts ringing Othello enters on the scene. Even when inanimate objects merit the

highest praise Shakespeare adds a touch of something precious to them by comparing them to human twins.

The following passage is taken from *Henry the Eighth*, Scene Two, Act Four, Line 45—Griffith is extolling the virtues of Cardinal Wolsey to Katharine. He informs her that for once the merits of a man, fashioned in this instance into two twin seats of learning will perpetuate the memory of the Cardinal.

Griffith

Noble madam

Men's evil manners live in brass;
their virtues

We write in water. May it please
your highness

To hear me speak his good now?

Katharine

Yes good Griffith;

I were malicious else.

Griffith

This Cardinal

Though from an humble stock
undoubtedly

Was fashioned to much honor from
his cradle.

He was a scholar, and a ripe and good one

Exceeding wise, fair spoken and
persuading;

Lofty and sour to them that loved
him not

But to those men that sought him
sweet as summer.

And though he was unsatisfied
in getting,

Which was a sin, yet in bestowing
madam

He was a scholar, and a ripe and good one;
for him

*Those twins of learning that he
raised in you*

*Ipswich and Oxford; one of which
fell with him*

Unwilling to outlive the good that did it;
The other though unfinished, yet so

famous

So excellent in art and still so rising
That Christendom shall ever speak

his virtue,

His overthrow heap'd happiness upon him
For then, and not till then, he

felt himself

And found the blessedness of being little

And, to add greater honours to his age

Than man could give him, he died
fearing God.

Christ Church College Oxford founded by Wolsey under the name of Cardinal's College has well borne out Griffith's prediction. It has interested us greatly to discover that this discourse of Griffith's which appears to have been paraphrased from Holinshed's *Chronicles of England, Scotland and Ireland* differs from its precursor in one important particular. Holinshed speaks of "His two Colleges at Ipswich and Oxenford." The interpollation of the word *twin* with its implication seems to have come from Shakespeare's pen.

The other minor reference to twinning comes to us in *The Winter's Tale*, Act One, Scene Two Line 60. Polixenes, King of Bohemia is describing to Hermione, Queen to Leontes, the life which he and her husband lived when they were boys together. It trips the same measure. The old man uses the analogy of a twinned existence to recreate the days of his youth, when life was happiness unimpaired.

Polixenes

Your guest, then, madam;
To be your prisoner would import
offending;
Which is for me less easy to commit
Than to punish.

Hermione

Not your gaoler, then
But your kind hostess. Come I'll
question you
Of my lord's tricks and yours when
you were boys;
You were pretty lordlings then?

Polixenes

We were fair queen,
Two lads that thought there was no
more behind,
But such a day tomorrow as today,
And to be boy eternal.

Hermione

Was not my lord
The verier wag o' the two?

Polixenes

*We were as twinned lambs that did
frisk 't the sun
And bleat the one at the other;
what we changed*
Was innocence for innocence;
we knew not
The doctrine of illdoing, nor dreamed
That any did. Had we pursued that life.
And our weak spirits ne'er been
higher rear'd
With stronger blood, we should have
answered Heaven

Boldly, "not guilty;" the imposition
cleared
Hereditary ours.

Hermione

By this we gather
You have tripp'd since.

The two plays, *The Comedy of Errors* and *Twelfth Night*, differ in some particulars. Their differences however only serve to bring out the great similarity which is apparent in the underlying structure of each creation. The activating motive of each drama is the desire on the part of twin human beings to be united the one with the other. Though the locus may vary from Illyria to Ephesus, the period of separation change from years in *The Comedy of Errors* to a matter of days in *Twelfth Night*, the underlying humanity with its uncontrollable urges toward a reunion of body and soul with a twin mate remains always the same.

Indeed without this passionate devotion to an ideal it is evident that neither of the two plays would have been written. All that we see on the stage is the story of this attempt to be reunited. The things that happen in this search are presented act by act in an ordered dramatic structure which moves quickly toward its ends. These latter manifestly are the bringing together of these so like human beings, the two men in *The Comedy of Errors* and the youth and the maiden in *Twelfth Night*. The play ends in each instance as if it were by common consent when this finality is consummated. The very love stories which add passion and reality to the lives of the actresses and actors under observation are blurred with something comical in their immediate surroundings. While they appear important enough to those taking part therein they have a sense of diminished import to the audience who have been admitted behind the scenes.

The audience has been permitted by prearrangement to pierce the disguise of Viola. It is only at the very end in *Twelfth Night* when the cards have been finally laid on the table and Viola and Sebastian produced simultaneously in the flesh that the lives of the remaining players are thought of as having been set for all time in a fixed pattern. How could we consider Olivia as having been comfortably settled in life when we, though not she, were aware this hour or more that she had been wedded to the wrong human being? We must feel in the same case in regard to the Duke who has amazed us by not being able to discover that his sprightly page, Cesario, was in truth a maiden already deeply attached to him.

The declaration of the twins in their true light makes an end to all uncertainty. We feel that interesting as much of the drama has been in regard to the minor characters it has been but a by play after all. The devotion of the twins, the overwhelming importance of their reunion toward which they were obviously directing every tithe of their energies was what mattered most. As we have said without Viola and Sebastian, without the tragedy of their separation, without their headlong love for one another there would have been no Toby Belch, or Sir Andrew, or any other of the amusing and compassionate ones who walked the boards.

The hope of meeting was what held both young people, strangers and aliens in Illyria. Had not Viola received the encouraging news from the sailor in the first act as to the possibility of Sebastian having been saved she must have been on her long journey home before the drama began. It was no small evidence of devotion that she was willing to change her sex, undergo all manner of wild experiences, threats upon her life, unrequited love from another and misguided woman all for the purpose of remaining in Illyria on the chance that her beloved Sebastian might still be in the land of the living. All that we have said of Viola can be said in part at least of Sebastian. That Shakespeare created his twins in attractive guise is easily seen from the course of the play. Viola is pictured as having a dual form of allure. She could create a great passion in the breast of Olivia, to whom she appeared as a youth and at the same time awaken in the Duke a love which smoldered against all form and precedent until her appearance in her true body made everything clear and defensible. Commentators upon Shakespeare's characters have gone to great extremes in extolling Viola's many qualifications. Winter in his *Shadows of The Stage* describes her thus:

"Viola is Shakespeare's ideal of the patient idolatry and devoted silent self sacrifice of perfect love."

She was possessed not only of rare beauty but of a discerning soul as well. We have been intrigued by the observation that Olivia, who fell in love with Viola on sight, but for reasons plain to us but beyond her comprehension was repulsed, nevertheless was enabled to create in the mind of Sebastian a feeling toward her similar to her own.

In a word there was some strong tide of emotion which bound these three together in a topsy turvy pattern. The psychologist might note also that the position of the two women was the same in this respect. They were both going through the agonies of a separation by death from beloved brothers,

They were, unknown to themselves, perhaps searching for the great consolation. As for Sebastian, that he was handsome goes without saying. He was a masculine image of his sister. That he was unusually attractive in all ways the actions of Olivia, a lady of high degree, make us fully aware. He was possessed of more than beauty, he was filled with determination, with purpose, what he wanted he reached for and took. To quote Ulrici, "taking with one snatch that which the Duke has in vain endeavored to obtain by entreaties, lamentations and sighs." That he could make friendships, the devotion of Antonio testifies. He must have been capable of uncommon deeds of strength and endurance when he was able to rescue himself from the shipwreck. That he was a veritable man among men in an age cholerick and given to violence is shown by the mauling he gave to Sir Toby Belch and Sir Andrew. He was, we found out, an evil man to arouse and one fully capable of taking care of himself in any emergency. No better commendation of the characters of the twins Viola and Sebastian can be made than to attest that they have been objects of admiration on account of their many virtues, not alone of their little group of companions but of thousands of strangers for well nigh four centuries.

The nobility of all the family related to the brothers Antipholus is bravely stated in the very first exchanges of the play entitled *The Comedy of Errors*. This note is sounded in the "prologue like" speech of Aegeon in the first act. From this statement we find that the merchant has risked not only his fortune but his very life itself by venturing to the city of Ephesus. This adventure had been brought about by his desire to reunite members of his family who years before, much as in *Twelfth Night*, had been separated during the course of a ship wreck. He came to Ephesus in this search knowing well that he risked his life thereby. Not *his* eagerness alone brought about the dangerous journey.

As we listen to his words we discover that the twin who had remained with him after the separation at sea had joined his supplication to his father's. So that in the end father, separate son, seeking reunion with his brother, and finally the twin servant Dromio all set out together on a common purpose. When the father was condemned in Ephesus they had been years upon their journey. With what faithfulness and at what a cost the search had been carried on we may discern from one of the paragraphs of Aegeon's speech to Solinus. The expenses of this faring must have embarrassed the fortunes of one far richer than Aegeon. One reaction to the description of these

events must be in the main to the unselfish natures which for the satisfaction of a family love were led to such dangerous adventuring. Act One, Scene One, Line 133—

Aegeon

Five summers have I spent in
farthest Greece,
Roaming clean through the bounds
of Asia,
And coasting homeward, came to
Ephesus;
Hopeless to find yet loath to leave
unsought
Or that or any place that harbors men
But here must end the story of my life;
And happy were I in my timely death,
Could all my travels warrant me
they live.

These expressions of a resigned heroism are what we might expect from Shakespeare in his wish to describe the father of identical twins. And best of all for the purposes of our story it was a heroism that was shared by father, by son and by twin servant. We could have no better introduction to the characters of the Brothers Antipholus, no fitter authentication of the real fineness of their natures than in this opening address of their father's. While the father is led away to await his untimely end Ant. S. decides to continue his search for his brother though he distrusts the town in which he is living and feels that his time spent there is full of danger. Act One, Scene Two, Line 96—

Ant. S.

They say this town is full of cozenage;
As, nimble jugglers that deceive the eye,
Dark working sorcerers that change
the mind,
Soul killing witches that deform
the body,
Disguised cheaters, prating mountebanks
And many such like liberties of sin.

That Ant. S. was able to evoke the deepest emotions in women is made plain at once from the passionate diatribe which Adriana addresses to him when she thinks her husband has turned against her. Act Two, Scene Two, Line Three—

Adriana

Ay, ay, Antipholus, look strange
and frown
Some other mistress hath thy
sweet aspects;
I am not Adriana, nor thy wife.
How dearly would it touch thee
to the quick

Should thou but hear I was licentious
And that this body consecrate to thee
By ruffian lust should be contaminate:
I am possess'd with an adulterate blot
My blood is mingled with the crime
of lust

For if we two be one and thou
play false;
I do digest the poison of thy flesh
Being strumpeted by thy contagion.

All this bespeaks an attachment which has been founded upon a rock. The woman's devotion to her husband is all embracing, the suggestion that he is playing her false well nigh sets her mad. As further proof of the attraction of the two brothers witness the scene between Antipholus S. and his sister in law, Luciana. Act Three, Scene Two, Line One.

Here occur some of the most heart searching lines in the play. All through this intimate exchange it is evident that the lady while loyal to her sister's cause is maintaining her position with some difficulty. Through her lines shows the undoubted affinity which she is already feeling for Ant. S. even though she still considers him in truth her sister's husband. The exchanges between the two have been often commented upon and admired. For our purpose they serve as additional proof of the powers of attraction which reinforced the personalities of the Brothers Antipholus. Far from being a proof of personality defect the irritability displayed at times by Ant. E. throughout the scenes we think may be considered but a deeper insight and appreciation of the incompleteness which the separate partner of a twin presents. It must be remembered that Ant. E. is the one who has lived most alone.

During his adolescence he did not have the supporting influences of either his father or his brother. That he was peevish, somewhat inclined to violence, what today we would call *temperamental* to our minds was all intentioned on the part of his creator. The latter we think was showing us what incompleteness might produce in a solitary twin bereft of his alter ego. If we might hazard a guess, we might suggest that he was the left handed one of the combination.

That he was well regarded in the community we feel sure from the experiences described by Ant. S. as he wanders around the city and is mistaken for his brother. Shakespeare would allow no depreciation of one of his twins by his neighbors. Nor did as we will quickly see. Act Four, Scene Three, Line One—

Ant. S.

There's not a man I meet but
doth salute me
As if I were their well-acquainted
friend;
And every one doth call me by my name,
Some tender money to me; some
invite me;
Some other give me thanks for
kindnesses;
Some offer me commodities to buy
Even now a tailor called me in his shop
And showed me silks that he had
bought for me
And therewithal took measure of
my body
Sure these are but imaginary wiles,
And Lapland sorcerers inhabit here.

The character which Ant. E. bears in his own city is aptly brought out by the exchanges which take place between Angelo, the goldsmith and the Second Merchant when they discuss the mystery of the gold chain which has been delivered to the wrong twin. Act Five, Scene One, Line One—
Angelo

I am sorry, sir, that I have hindered you;
But I protest he had the chain of me,
Though most dishonestly he doth deny it.

Second
Merchant

How is the man esteemed here
in the city?

Angelo

Of very reverent reputation, sir
Of credit infinite, highly beloved,
Second to none that lives here in the city
His word might bear my wealth
at any time.

Shakespeare has established the worthy characters of his twins many times throughout the lines of the play. They set the measure of the piece. When their perplexities come to an end the play does also and the minds of all the characters are set at rest.

To think of the events surrounding twinning in the Bible is to review a scene of violence and deceit. Misfortune is the reward of those who figure in such happenings. These misfortunes vary from flight to prevent one's destruction as in the case of Jacob, to the conviction of incest, and the subsequent disgrace as befell Judah. The scriptures bring forward no ameliorating circumstances. The stories of the two twinings are tales of stark tragedy. Human nature is shown at its worst, treacherous, grasping, bloody minded.

The immortal bard ends one of his stories of

twinning with the haunting melody of the Clown's song,

"With hey, ho the wind and the rain."

All is well with the principals of the drama. Twin brother and sister have found mutual happiness. Their harrowing adventures, separation by ship wreck serve only as a background to light their present happiness. Their wandering days have come to an end. They have received a reward for their many virtues. So too in *The Comedy of Errors*. All the uncertainties that arose due to the mistakes in identity have been settled to the satisfaction and amusement of all. We see the final scene of a well rounded comedy. It is a significant thing that Shakespeare elected to treat twinning in this lighter vein. What he might have done with it had he so desired a reading of such a play as King Lear informs us. He could not see the strange happening in that light. To him it was something to be extolled, something out of which an amusing story with a happy ending might be suitably devised.

The curtain is about to fall on *The Comedy of Errors*. The Abbess has invited all and sundry into her home to celebrate what has happened and what is to come. Solinus the Duke of Ephesus voices the sentiments of many in his final unctuous line.

"With all my heart, I'll gossip at this feast."

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O & 65—From Page 110

in the rush of getting overseas. Hospital work got lighter and one could take time to get acquainted with the surrounding country. And Thanksgiving had a new meaning because of the Armistice

The work of Hospital Centre Kerhuon now was to get the men started back home. We had many returning from the front to be put in the best condition possible, nursed, equipped and sent to the returning ships. The tendency was not to send us the more serious cases, but convalescent wounded, and later our work was that of an equipping and evacuating point.

There was a certain feeling in belonging to the "Original 65" and a Carolina Club was organized which gave several delightful dances, during the period that restrictions were lifted. A Masonic Club was formed at Casemates Fautras and served to bring together men from all over the U. S.

May 30th, Memorial Day in a foreign country and with many of our dead near us, gave opportunity for observation and thought that many will never forget. Many received three-day leave in Paris and enlarged their views of France.

July 14th we had our farewell dance, and watched the fireworks in the harbor, the French celebrating, and all search-lights from our ships playing.

Sergeant Hoffman tells us that "Casuals who had been all over France said we fed better than any other post."

The following list includes the names and addresses a few years after the war of the corps men of Base Hospital 65:

C. R. Albea, G. M. Apperson, G. H. Allman, A. E. Bennett, J. R. Binkley, L. W. Binkley, G. W. Bager, S. L. Byerly, A. T. Cobb, C. V. Connell, F. S. Dalton, Z. A. Davis, T. E. Dodson, H. D. Doyle, S. W. Evans, H. E. Frazier, R. C. Gilbert, S. J. Goforth, R. D. Hancock, J. D. Hankin, Jake Hege, Ollie Hege, W. E. Helsabeck, Hazel Hitchcock, M. W. Ingle, G. L. Johnston, W. D. Joyce, Wm. A. Julian, J. E. King, T. R. Lehman, H. T. Lilly, W. G. Marler, S. W. Minter, J. F. Morton, M. W. Morton, R. J. McCollum, E. E. Norman, J. L. Palmer, R. J. Patterson, R. D. Peeler, W. B. Pierce, J. L. Poindexter, Wm. R. Poindexter, J. C. Pulliam, J. R. Sharpe, J. H. Smitherman, J. F. Southern, Clarence Warner, G. F. Webb, W. B. Williams, H. S. Wimbish, O. E. Wright and Wm. Wright, Winston-Salem; L. G. Albright, E. L. Alston, Jack Anthony, J. W. Andrews, P. H. Beeson, G. A. Burns, H. H. Bristow, J. F. Case, G. C. Clark, R. W. Clemmons, George Creson, R. C. East, J. T. Heath, A. B. Holt, E. B. Huffines, J. F. Job, W. C. Kerr, E. W. Knight, G. P. Meadows, R. C. Milliken, C. A. Pope, M. L. Ralls, Max Reeves, J. P. Reeves, O. W. Thomas, M. S. Turner, G. A. York, G. W. Tyson and J. S. Ridge, Greensboro; W. P. Bain, Lexington; E. T. Beddingfield, Clayton; Wm. I. Berryhill, J. H. Collins, G. R. Hamilton and A. E. Presnell, Charlotte; J. C.

Bolton, J. R. Garrison, Jesse Harris, A. E. Holmes, J. J. Pittman, H. A. West and H. A. White, Fayetteville; J. C. Burgess, Glenwood; F. E. Brown, Cycle; J. W. Bryan, Jr., Greenville; Shorty Boyd, Kinston; Charles Craig, J. W. Cunningham, E. J. Jones, F. W. Morris and George B. Prather, Gastonia; Ben Cabel, J. M. Watson and G. E. Waynick, Elon College; J. D. Chavey, Hollman; S. W. Daniels, Oxford; A. L. Cobb, C. W. Covington, M. B. Fels, M. H. McMichael, J. L. Pinnix and C. G. Strader, Reidsville; L. H. Fogleman, Snow Camp; A. L. Freeze, H. G. Hedrick, G. W. Lowe, R. B. Pegram, H. E. Samuels, David Stanton, L. R. Sykes, C. W. Thompson, E. L. Winfrey and J. U. Wright, High Point; A. P. Fulk, J. M. Hiatt, J. E. Needham and R. R. Redmon, Pilot Mountain; F. M. Fuller, J. B. King and W. B. Tucker, Louisville; C. H. Gibson, Madison; Z. V. Harris, Trinity; J. E. Harris, Henderson; J. C. Hanes, Mocksville; L. V. Hart, Tarboro; P. B. Henley, J. F. Lewallen, W. C. Page and C. T. Richardson, Asheboro; A. L. Hood, Lenoir; R. E. Hollingsworth, Mount Airy; P. R. Horne, Wadesboro; S. W. Hoffman, M. R. Long, J. G. Morrison, E. L. Nash and L. B. Shaver, Statesville; M. G. Jenkins, Rosemary; P. M. Jordan, Gibsonville; R. A. Joyce, Danbury; G. L. Lawrence, Elkin; L. A. Lefort, Denim; W. S. Linville, Jr., Kernersville; J. T. Matthews, East Bend; H. A. Mitchel, Archdale; J. M. Morgan, Dunn; B. A. Mahaffey, Hiddenite; D. M. McMillan and R. A. McQueen, Red Springs; D. L. Nance, Oak Ridge; M. B. Neal, Walnut Cove; F. L. O'Neal and W. D. Perkins, Selma; P. L. Pearson and T. G. Williams, Raleigh; M. W. Page, Elm City; M. D. Privett, Lovelace; C. J. Roberts, Wentworth; M. C. Ross, Bonneton; D. D. Sherrill, Catawba; A. L. Smith, Concord; J. D. Snow, Rusk; Tonie Stott, Bailey; Clyde Thomas, Stoneville; R. S. Toxey, Elizabeth City; O. P. White, Salemburg; P. W. Whitlock, Salisbury; R. L. Wilmoth, State Road; R. C. Wilkerson, Kenly; J. W. Thomasson, Buck Shoals; W. D. Alford, Hannibal, Mo.; Gordon Bowers, Sevierville, Tenn.; M. A. Byerly, P. A. Dixon and C. M. Sherrill, Roanoke, Va.; Dwight Brantly, Omaha, Neb.; D. R. Cox, Pulaski, Va.; A. M. Clement, and G. C. Burckett, Louisville, Ky.; C. R. Franks and J. C. Twiggs, Hiawasee, Ga.; J. B. Gill, Miami, Fla.; D. S. Hollenga, Petersburg, Va.; T. A. Hooper, Cleveland, Ga.; P. C. Hunter, Chicago; O. H. Johnson, Fargo, N. D.; D. W. Mitchell, Dalton, Ga.; W. L. Morris, Wytheville, Virginia; D. J. Robertson, (address unknown); J. S. Rogers, Hanover, Ind.; Wm. F. Rodgers, East Cambridge, Mass; Roy Thomasson, Detroit; C. H. Wicks, Jr.,

Syracuse, N. Y.; S. M. Wrenn, Richmond; M. F. Wright, Providence; W. D. Wylie, Buffalo; E. J. Adsit (unknown); O. J. Allison, Columbia, S. C.; R. A. Dean, Durham; W. H. Creech, Selma; E. B. Page, Wilmington, Va.

The following is a consolidated report of Base Hospital No. 65 (B. H. No. 92 & 105) included. H. C. Kerhuon, A. P. O. Amer. E. F.

Date	Admissions	Transferred		Deaths
		To United States	To Discharged Duty Hospitals	
September 1918	805	0	31	0
October 1918	3491	74	1062	436
November 1918	8298	6164	268	734
December 1918	3631	5447	170	0
January 1919	4179	2736	149	0
February 1919	7538	7184	284	0
March 1919	9191	7405	381	0
Grand Total	37133	29010	2345	1170

Comparing the services of Hospital Unit O merged immediately on arrival at Talence near Bordeaux with the Base Hospital from the Massachusetts General Hospital of Boston to form Base Hospital No. 6; with the services of Base Hospital No. 65 there was a distinct advantage to the entire personnel of Hospital Unit O in that the Mass. General Hospital unit had already been located for several months in a boys' school, which they had almost entirely reconstructed and to which they had added both brick and wooden barracks, connected by covered and steam heated corridors and board and brick walks. The steam heated barracks, reception rooms and operating rooms made it possible to divide the surgical patients into three classes: (1) The recently operated on or acutely ill; (2) the convalescent and (3) the ambulatory. In addition, Base Hospital No. 6 was backed by various hospitals at Bacheville and DeSouge, as well as Colonel Bergonie's farm and the hospitals in the extreme rear. When Beau Desert was first used, and it was never used much beyond this initiation, it was lent nearly 2,000 beds and equipment from the supplies of Base Hospital No. 6. The construction of Base 6 and the providing of supplies was due almost entirely to the foresight and management of Colonel Washburn, former superintendent of the Mass. General Hospital, Boston. He was a superb officer and hospital manager, very strict but fair in the extreme. We

regretted that he was removed to England and that a weaker command was left with Colonel Babcock in spite of all the plans Colonel Washburn had laid down.

While the service of Base Hospital No. 65 was largely medical and done under conditions near and after the armistice, and met under conditions of extreme disorganization at Brest, the service of Hospital Unit O and the Mass. General Hospital Unit was largely surgical, first to the French and English and to German prisoners, and then to our men, from July 18th, 1918 on to the completion of our activities in France. The surgical cases listed in the operating room book, which I still possess, were 17,466 from March 19th, 1918 to February 14th, 1919, when we were replaced by other units and set sail for home.

The greatest renown gained and maintained by any of the doctors of these two hospital units has been that of Lieut. Col. Frederic Hanes as Professor of Medicine at Duke University and of Major Wm. Allan with his work in Heredity. Major Jas. M. Northington has contributed greatly to medical publication, to the literary style of the medicine of this section, and its better organization, and he has been the stout champion of the general practitioner. However, I suspect that although these doctors and officers gave their services unstintingly and efficiently to the cause of war, the war, in fact, was wasted time for them, and that their successes lie further back in training and within themselves, than anything the war period had to offer them.

I think it will be seen again, now, how the doctors all over our country will respond to the call, and will give themselves over entirely to the cause, if we go again to war.

AN ABORTIVE FOR THE COMMON COLD

(M. Kovnat, State Island, in *Med. Rec.*, Mar. 5th)

Fresh U. S. P. tincture of iodine, 8 minims every few hours for several days has been used in a routine general practice during the past four years. It is our belief that it has been successful in aborting the common cold in the great majority of cases. Except for slight diuresis no untoward effects have been noted. There has been no case of iodism.

EXFOLIATIVE DERMATITIS AND DEATH DUE TO PHENOBARBITAL

(D. L. Sexton, et al., St. Louis, in *Jl. A. M. A.*, Feb. 22nd)

Phenobarbital is advisable, to administer first in small doses, increasing gradually until tolerance is established. Withdrawal of the drug at the first appearance of the rash is the safest procedure. Even then a severe constitutional reaction may occur, but for the most part a fatal outcome will be averted. The tolerance of phenobarbital depends on individual susceptibility. A case is reported emphasizing these points.

Spontaneous Hypoglycemia: Report of Cases*

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HYPOGLYCEMIA may or may not be accompanied by symptoms. In either case it depends on abnormality of the mechanisms which regulate the level of blood sugar. Irregularity develops in pathologic conditions of the liver, in the presence of insufficient function of the anterior lobe of the pituitary gland, the cortex of the adrenal gland or thyroid gland, and in organic or functional disorders of the nervous system as well as in disorders of the pancreas.

The symptoms of hypoglycemia, whatever the cause, result from the hypoglycemia itself, and never from insulin unless hypoglycemia is produced by an excess of insulin. Particularly impressive symptoms of hypoglycemia are hunger, weakness, disorientation and a strikingly prompt relief of symptoms after taking sugar.

A number of writers have suggested that the so-called nervous hypoglycemia, that is, the hypoglycemia of patients who have unstable nervous systems, or recognizable functional nervous disorders, represents functional hyperinsulinism. The suggestion is unsupported by evidence and, in our opinion, isolated attacks of spontaneous hypoglycemia are never in themselves sufficient evidence to justify the diagnosis of a primary disorder of the pancreas or other organs in the blood sugar regulating system.

On the other hand, hyperinsulinism should be recognized as a disease. Its diagnosis has been established with complete reliability only in cases in which operation or necropsy has revealed an adenoma or carcinoma originating in the islets of Langerhans. The number of such cases has been small. Frantz, who recently reviewed the world literature, found only ninety-six cases in which the diagnosis had been proved at operation or necropsy. We can add to his compilation six earlier cases from the Mayo Clinic which he failed to include and four cases heretofore unreported. This gives a total of 106 cases.

Eighteen cases of hyperinsulinism have been identified at the clinic in fourteen years. Sixteen were found at operation and two at necropsy. In

the same period hyperinsulinism was suspected and operation was performed in eighteen additional cases without finding tumors of the islet cells. In five of these cases evidence of hepatic disease could account for hypoglycemia. In the remaining thirteen, nothing abnormal was revealed at operation. Hyperinsulinism also has been diagnosed in nine cases in which operation was not performed. In summary, hyperinsulinism has been diagnosed or suspected in forty-five cases at the clinic; operation or necropsy confirmed the diagnosis in only eighteen.

The group of thirteen cases in which operation revealed neither tumor of the pancreas nor disease of the liver provides material for special attention. In an undetermined number of cases a tumor of the pancreas may have been overlooked. In some, we possibly had to deal with primary overactivity of nontumorous insular tissue, analogous to the hyperthyroidism of exophthalmic goiter. In the latter, diffuse cellular hypertrophy and hyperplasia of thyroid tissue can be identified microscopically. In analogous cases of suspected hyperinsulinism in the absence of tumor, microscopic examination of tissue from the pancreas occasionally reveals changes that suggest hypertrophy or hyperplasia of islet tissue. However, estimation of the relative amount of insular tissue is attended with great difficulties. In a few cases of this type, subtotal resection of the pancreas or a comparable procedure has been corrective. David, in a recent review, stated that of seventeen patients so treated, eleven were apparently cured and another improved. Thus, the evidence for hyperinsulinism in such cases is by no means complete.

The foregoing explains why a degree of uncertainty attends the diagnosis of hyperinsulinism in many cases. Before the pancreas is explored, a diagnosis at best can be only a presumptive decision as to probabilities. Nevertheless, in all cases of abnormal depression of the blood sugar, such a decision must be made, because if the evidence for primary overactivity of the pancreas is inadequate operation is uncalled for; if it is adequate, operation should be performed. Insular adenomas

*The context of this paper formed the basis for a lecture given N. C., November 4th, 1940. by Dr. Wilder at a symposium at Duke University, Durham.

are likely to become malignant and for this reason alone should be excised. In his review, Frantz found that in five of ninety-six cases of islet tumor the tumors were malignant and had metastasized, in twenty-one they presented the histologic picture of malignant growths but had not metastasized and in seventy were relatively benign according to microscopic examinations. Removal of the tumor provides lasting relief in cases in which hypoglycemia depends on insulin exported from tumors. If a tumor cannot be found in a case that satisfies the clinical criteria demanded for a diagnosis of hyperinsulinism, surgical methods for reducing the total export of insulin from the pancreas are available and deserve trial.

Of the eighteen cases of islet-cell tumor which have been encountered at the Mayo Clinic in the last fourteen years, twelve were reported in detail by one of us (Wilder³) and two were mentioned in the tabular material in the same work. In this review we shall report briefly five cases of islet cell tumor with hyperinsulinism, one of which was included in the tabular material elsewhere but was not described, and four of which were encountered recently.

In addition we shall present nine cases of severe spontaneous hypoglycemia in which islet cell tumors apparently were not the cause. Four of the nine have been reported elsewhere in greater detail⁴.

HYPERINSULINISM WITH TUMOR OF ISLANDS OF LANGERHANS

In the following cases the diagnosis of hyperinsulinism was established by discovery of tumors of insular origin at operation or necropsy.

Case 1.—A housewife, aged fifty-six years, registered at the clinic on June 11th, 1940. For two years she had had attacks of unconsciousness, occasionally with convulsions, mental lapses and confusion. These attacks had been precipitated by fasting or exercise. She also had had minor episodes of weakness and sweating. Relief had been obtained by taking food.

Examination disclosed nothing abnormal. In the course of examination the patient had hysterical attacks of laughing, crying, weakness and trembling. The morning value for blood sugar was 0.038 gm. per 100 c.c. of whole blood. A six-hour fast produced convulsions and coma, but relief was obtained after intravenous administration of a solution of dextrose. On June 17th, 1940 a small encapsulated adenoma was removed from the tail of the pancreas. Transient postoperative diabetes developed but disappeared by the third postoperative day. A pancreatic retention cyst was drained surgically. The patient was seen again three months later; symptoms had not recurred.

Case 2.—A woman, aged fifty-five years, registered April 16th, 1940, and related that attacks of convulsions and unconsciousness had begun two and a half years prior to registration and had occurred when she was hungry, usually in the morning. She also had had minor attacks of sweating, weakness, diplopia and drunken behavior.

Results of examination were negative. The morning value

for blood sugar was 0.038 gm. per 100 c.c. After fasting for sixteen hours the value was 0.033 gm. The patient had convulsions, but obtained instant relief from intravenous administration of solution of dextrose. A diet high in protein which included sufficient calories to meet the basal requirement was given, and 60 per cent more. Six feedings per day were prescribed. The symptoms were relieved completely for six days while the patient was in bed. Walking about before a meal on the sixth day precipitated a severe reaction.

At operation a small encapsulated adenoma was removed from the head of the pancreas. Transient postoperative diabetes developed but disappeared after forty-eight hours. A pulmonary embolism occurred on the sixth day, with recovery of the patient. Former symptoms had not returned when she was dismissed three months later.

Case 3.—A farmer, aged thirty-three years, registered August 19th, 1940, and related that recurrent attacks of weakness, paresthesia, loss of consciousness and convulsions, as well as minor episodes of weakness and sweating, had increased in severity for eighteen months. Relief had been obtained after eating. Results of examination were negative. An electro-encephalogram revealed nothing abnormal. After fasting for seventeen hours the value for blood sugar was 0.067 gm. per 100 c.c. A diagnosis of epilepsy was made. The patient was dismissed and dilantin sodium (sodium 5,5-diphenyl-hydantoinate) was prescribed.

The patient returned one month later because of prolonged coma and convulsions. He was observed in his second such attack the night of his arrival and the condition was recognized as typical hypoglycemia; the value for blood sugar was 0.032 gm. per 100 c.c. Prompt relief was obtained after intravenous administration of solution of dextrose. At operation a small, well-encapsulated adenoma was removed from the middle portion of the pancreas. The postoperative course was uneventful and the patient was dismissed on the eleventh day. Symptoms have not recurred.

Case 4.—A woman, aged fifty-four years, registered on January 2nd, 1940. She gave a history of typical hypoglycemia of fifteen years duration. Weakness and sweating had been precipitated by exercise or hunger and relieved by food. Onset of attacks of unconsciousness had begun four years prior to registration. These had become increasingly prolonged and had been associated with convulsions. The patient had learned to control these attacks by means of frequent feedings.

Results of examination were negative. The value for fasting blood sugar was 0.040 gm. per 100 c.c. A spontaneous attack occurred in the hospital four hours after a meal; the value for blood sugar at this time was 0.025 gm. Prompt relief was obtained after food had been taken.

At operation a well-encapsulated adenoma was removed from the body of the pancreas. The postoperative course was stormy and severe postoperative diabetes developed. The value for the blood sugar was 0.400 gm. per 100 c.c. Urinalysis disclosed glycosuria grade 4, acetone and diacetic acid. The hyperglycemia disappeared and the urine became normal by the fifth day. Drainage from the pancreatic fistula continued for many weeks. A pleural effusion on the left side was also drained. Secondary anemia developed, for which many blood transfusions were given. When the patient was dismissed five months after operation she was free of symptoms.

Case 5.—A farmer, aged thirty-five years, registered at the clinic on March 29th, 1936. He stated that he had had a momentary lapse of consciousness one year prior

to registration. Six months later attacks of sweating, mental confusion and dizziness had begun. A few days later he had become comatose and transient hemiplegia had developed, which had lasted for several days. He had been hospitalized elsewhere and a diagnosis of brain tumor had been made. He had recovered and had been free of symptoms for five months. Twenty-four hours before admission to the clinic he had suddenly become comatose.

The patient was comatose on arrival at the clinic. Results of examination were negative, except for bilateral Babinski reflexes. The spinal fluid was normal; blood sugar determinations were not recorded. A ventriculogram disclosed an obstructing lesion which was thought to be located below the third ventricle. A presumptive diagnosis of brain tumor was made.

Three days after admission the patient regained consciousness momentarily after intravenous administration of solution of dextrose, but he again became comatose and seven days later he died of pneumonia. At necropsy an adenoma of the islands of Langerhans was found; degenerative cerebral changes probably secondary to the adenoma, were present, as well as evidences of bronchopneumonia and abscesses of the lungs.

In four of these five cases, hyperfunctioning adenomas of the islands of Langerhans were removed at operation, at the clinic or elsewhere, with apparent cure. In the fifth case, a similar tumor, entirely unsuspected, was found at necropsy. In similar cases, assay of tissue from the tumor has revealed a content of insulin far in excess of normal.¹ These cases, therefore, can safely be regarded as cases of proved hyperinsulinism. Certain features of the clinical data attract attention:

In each instance the course of the disease was characterized by progression in the severity, frequency and duration of attacks of hypoglycemia. In each instance, in which a determination of the blood sugar was made in the course of a spontaneous attack, the level was found to be extremely low. In each instance in which it was determined the morning value for blood sugar was low.

In three instances in which a fast test of thirty-six hours was undertaken, typical hypoglycemic crises were induced, often long before expiration of the fast. Levels of blood sugar during such attacks were always extremely low, varying from 0.033 to 0.044 gm. One patient (case 3) had withstood seventeen hours of fasting without symptoms when food was given. The value for blood sugar at that time was 0.067 gm. The diagnosis was established later when he was seen in a typical spontaneous attack.

In spontaneous attacks dextrose given intravenously or sugar by mouth produced almost instantaneous relief of symptoms.

Results of dextrose tolerance tests were not helpful. Marked variations occurred in the form and magnitude of the curve of blood sugar. The effect of epinephrine on levels of the blood sugar was not consistent.

SEVERE SPONTANEOUS HYPOGLYCEMIA

In the following cases hyperinsulinism was suspected but no abnormality of the pancreas was found at operation.

Case 6 (previously reported in detail by Judd, Kepler and Rynearson).—The patient, a woman forty-three years of age, registered in July, 1929. Her history revealed that in 1926 diabetes mellitus, with the typical triad, had developed and had increased in severity. When first seen at the clinic, the diabetes was adequately controlled by a diet low in carbohydrate and by administration of 70 units of insulin per day.

In 1930, periods of intractable glycosuria, which did not respond to insulin, although some doses were as large as 600 units per day, began to alternate with periods of severe and prolonged reactions to as small a dose as 10 units of insulin. In 1931 administration of insulin was discontinued. In 1932, spontaneous hypoglycemia occurred every few days. Frequent feedings of a diet high in carbohydrate were prescribed. In 1933 hypoglycemic coma developed which lasted for two weeks. Intravenous administrations of solution of dextrose were ineffective. This attack was followed by marked personality changes and peripheral neuritis. The patient became addicted to barbiturates.

At exploratory laparotomy performed in 1933 the pancreas was found to be normal; biopsy of the liver disclosed the presence of fatty metamorphosis and mild cirrhosis. In 1934 periodic attacks of hypoglycemia occurred. Glycosuria was present continuously. In 1937 the episodes of hypoglycemia became more frequent. The value for blood sugar at this time ranged from 0.500 to 0.600 gm. per 100 c.c.; 250 gm. of sugar was excreted in the urine in twenty-four hours. In 1938 abdominal pain, weakness and anorexia developed, followed by loss of weight. In 1939 ascites developed and multiple paracenteses were performed but death occurred. At necropsy atrophic cirrhosis and fibrosis of the pancreas were found.

Case 7 (previously reported by Judd, Kepler and Rynearson).—A woman, aged thirty-six years, registered at the clinic. Attacks of unconsciousness, convulsions, somnolence, weakness, disorientation and drunken behavior had occurred for two years. Relief had been obtained by eating or from intravenous administrations of solution of dextrose. Some improvement of symptoms had been noted by frequent feedings of a diet high in carbohydrate. The patient was disoriented and behaved drunkenly on arrival. The value for blood sugar was 0.036 gm. per 100 c.c. unless she ate frequently; she did not respond promptly to solution of dextrose given intravenously. At operation the pancreas was normal. Biopsy of the liver revealed fatty metamorphosis and portal cirrhosis.

Convalescence was uneventful. The attacks continued but remained mild if frequent feedings of a diet high in carbohydrate were maintained. The patient was too weak and mentally confused to work and she died six years later. Details of the immediate cause of death and findings at necropsy were not obtainable.

Case 8.—The patient, a farmer aged thirty-seven years, registered on January 9th, 1940. The previous year he had had attacks of weakness, sweating, diplopia, disorientation, drunken behavior, convulsions and occasional losses of consciousness. These attacks had been precipitated by hard work. Results of examination were negative. Sweating, diplopia and tremors of the extremities occurred after twenty-four hours of fasting. The value for the blood sugar at this time was 0.048 gm. per 100 c.c. At the end of thirty hours the value was 0.037 gm.

At operation the pancreas disclosed nothing abnormal, but it was ligated. Hepatitis, cirrhosis and fibrosis of the liver were present; no tissue was removed.

Convalescence was uneventful except for development of a temporary pancreatic fistula. Symptoms have not returned at the time of this writing.

Case 9.—A woman, aged sixty-four years, registered on September 17th, 1940. A year prior to registration she had had an attack of aphasia, mental confusion and hemiplegia, which had cleared in three days. Two months before registration she had had attacks of dizziness, weakness, sweating, coldness and crying spells; her gait had become unsteady and she had become mentally confused. Eating had relieved the attacks.

Examination revealed generalized arteriosclerosis, mental confusion and marked slowness. The value for morning blood sugar was 0.048 gm. per 100 c.c. After fasting for thirty-eight hours the value was 0.042 gm. Fasting increased the confusion, talkativeness and instability. Intravenous administration of solution of dextrose produced no immediate improvement. At exploratory operation the liver and pancreas and other viscera appeared entirely normal. The postoperative course was uneventful. The patient has had no further attacks, but the mental status has not improved.

Case 10.—A girl, aged seventeen years, registered on November 8th, 1939. She had diabetes of seven years' duration which had been difficult to control because of the frequent reactions to insulin. Two years prior to registration epileptiform convulsions had occurred, accompanied by coma and sweating; at times the value for the blood sugar had been low and at other times normal or high. These attacks had increased in severity and the requirement for insulin had varied.

Results of examination were essentially negative. The patient's personality was peculiar. Results of the fast test were negative; the value for blood sugar after twenty-fours of fasting was 0.288 gm. per 100 c.c. There was no evidence of liver dysfunction. An electro-encephalogram disclosed decreased alpha waves and delta activity on the left, which suggested multiple scattered lesions. Operation was not considered indicated. Soon after leaving the clinic, the patient had a severe attack of hypoglycemia despite large amounts of solution of dextrose given intravenously, the blood sugar three hours later was so low it could not be determined. Consciousness returned three days later. Exploratory laparotomy performed elsewhere shortly thereafter was negative and the patient died postoperatively. At necropsy, a tumor of the pancreas apparently was not demonstrated. The hepatic cells were filled with glycogen. Analysis revealed a 6 per cent content of glycogen, which autolyzed slowly. This was interpreted as glycogenesis (von Gierke's disease).

Case 11.—A woman, aged twenty-eight years, registered January 8th, 1940. Four years prior to registration she had been placed on a reduction diet and had taken thyroid substance for control of obesity. Too-rapid loss of weight had led to discovery of diabetes. Doses of insulin had been increased to 72 units in six months, then three months later, its administration had been discontinued. Thereafter the urine was sugar-free without insulin and she gained 30 pounds (14 kg.). Two years before registration attacks of unconsciousness had begun which had lasted for six hours, and she had had many attacks of weakness and sweating. Exploratory laparotomy performed elsewhere revealed no abnormalities. Just prior to registration she had had severe hypoglycemic reactions with convulsions.

Results of examination at the clinic were negative, except

for mental confusion and facetiousness. After fasting for thirteen hours the value for blood sugar was 0.037 gm. per 100 c.c. A mild reaction occurred. The fasting value for blood sugar the next morning was 0.222 gm. The patient had several severe reactions, one after fasting and three during intravenous administration of a 10 per cent solution of dextrose. During one attack the value for sugar was 0.022 gm. in blood removed from one arm while a solution of dextrose was running into a vein in the other arm. Exploratory operation on January 19th, 1940, revealed nothing abnormal. The pancreas was ligated. The postoperative period was stormy. A fistula and pleural effusion developed and the hypoglycemic attacks continued. The patient returned in November, 1940, and a third exploratory laparotomy was performed. The pancreas, with the exception of the head, was atrophied. Tissue was not removed.

Case 12 (previously reported by Rushton, Cragg and Stalker).—A woman, aged thirty-nine years, was admitted to the Rochester State Hospital on February 7th, 1939. For seven years prior to this she had had paranoid ideas and periodic attacks of excitement, irritability and violence; these attacks were not related to fasting and were not relieved by food. Results of physical examination were negative. A psychiatric diagnosis of paranoid dementia praecox was made. The patient was negativistic and asocial. Shortly after admission, she had three attacks of unconsciousness after refusing to eat. These attacks consisted of weakness, confusion, sweating and pallor, followed by coma. The value for blood sugar in one attack was 0.040 gm. per 100 c.c. Prompt relief was obtained after sugar in some form was given orally or intravenously. A similar attack was induced by fasting for forty hours; at the end of this time the value for blood sugar was 0.031 gm. Prompt relief was obtained after dextrose was given. Other studies were uninformative. Exploratory operation revealed nothing abnormal. The pancreas was ligated and the patient died suddenly twenty-four hours after operation. At necropsy the adrenal glands were extremely atrophic and the liver was found to be lacking in glycogen.

In these seven cases, exploration of the pancreas was undertaken, either at the clinic or elsewhere, because it was felt that the tendency to downward displacement of the level of the blood sugar was persistent and the symptoms presented were indistinguishable from those in the cases in which tumors could be demonstrated. Analysis of the clinical and laboratory data does not reveal any consistent differences in the two groups of cases. However, as a group, these cases do not present the clear-cut picture seen in the cases in which tumors were present. In some of the cases, there was at times a surprising lack of correlation between symptoms of hypoglycemia and the level of blood sugar. In some, the response to dextrose administered during attacks was delayed or was absent. In some, the patient manifested some degree of personality change between attacks of hypoglycemia. In some, a history of antecedent diabetes mellitus was obtained. In one instance (case 6) diabetes existed side-by-side with attacks of severe hypoglycemia.

Cases 6 and 7 apparently represent primary

hepatic disease with selective or specialized derangement of the carbohydrate function of the liver. Both of these patients died several years after exploration. In case 6, necropsy, which was performed elsewhere, was reported as disclosing marked atrophic cirrhosis of the liver. It is probably safe to assume, in view of the similar circumstances, that death in case 7 was due to a similar cause.

In case 8 cirrhosis and fibrosis of the liver were reported by the surgeon, but this was not confirmed as biopsy was not performed. The patients in this case and in case 9 were relieved of further symptoms, at least until the time of dismissal. One cannot, however, fairly assume on such evidence that pancreatic ligation, which was carried out in these two cases, was curative.

Exploration in case 9 revealed nothing to account for the symptoms. The patient in case 10 died after completely negative exploration performed elsewhere. At necropsy a disturbance of glycogenolysis similar to that found in cases of glycogenosis was found.

Both cases 9 and 10 raise the interesting possibility that lesions of the central nervous system in the region of the hypothalamus may be the cause of the attacks of hypoglycemia. The patient in case 9 was a woman who had evidence of severe generalized and cerebral arteriosclerosis; she had had a stroke a year previous to the appearance of the symptoms of hypoglycemia and may have suffered from a vascular lesion which affected the hypothalamus. In case 10 "brittle" diabetes was present; this fact suggests the possibility that scattered lesions of the hypothalamus attributable to earlier induced attacks of hypoglycemia might underlie the later tendency to spontaneous attacks of hypoglycemia.

Meakins reported three cases of postencephalitic Parkinson's disease in which attacks of convulsions were associated with low values of blood sugar. He urged further search for other cases in which a connection between a hypothalamic lesion and hypoglycemia was suggested. Adlersberg and Friedman, who reported on disturbances of carbohydrate metabolism in twenty-one cases of postencephalitic Parkinson's disease, observed pathologically low levels of blood sugar in only three cases and these levels were observed after administration of 50 gm. of glucose. Hypoglycemia was reported by Rathery, Derot and Sterne in two cases of subdural hemorrhage and by Birnbaum and Wood in cases of general paralysis.

Such a cause for hypoglycemia is offered merely as a suggestion. To answer the many questions involved will require much more experimental and

controlled clinical study than the subject has received.

Case 11 is a fair example of the most puzzling group of all. The severe disabling hypoglycemia was unrelieved by ligation of the greater portion of the pancreas and there was no demonstrable disease of the liver or any other organ to account for the persistence of the disability. In our present state of knowledge, we can neither explain such cases nor offer any really effectual or permanent relief. Diet apparently can ameliorate the severity of attacks, but affects their frequency or duration only a little.

Case 12 represents a very unusual and perhaps overemphasized cause of severe spontaneous hypoglycemia. In view of the findings at necropsy, this case must be regarded as one of insufficiency of the adrenal cortex attributable to adrenal atrophy or Addison's disease without pigmentation.

UNUSUAL TYPES OF HYPOGLYCEMIA

The following two cases represent unusual types of severe hypoglycemia, which were recognized as such by the clinician and in which surgical exploration of the pancreas was not advised.

Case 13.—A farmer, aged sixty-four years, registered at the clinic September 2nd, 1940. For eighteen months prior to registration he had had severe attacks of pain in the upper portion of the abdomen and progressive enlargement of the abdomen. Temporary improvement followed roentgen therapy. He had been weak, constipated and had lost 38 pounds (17 kg.) in the two months before registration. On the way to the clinic he had an attack of weakness, dizziness and confusion, which was relieved by eating.

On examination the patient was cachectic and sick. The chief finding was an enormous, hard and nodular mass in the upper portion of the abdomen, which was apparently the liver. Roentgenograms of the thorax disclosed bilateral nodular metastatic lesions. Other findings were not significant. The patient omitted supper and breakfast in preparation for abdominal roentgenographic examination. Twenty-one hours after eating he became weak, confused and ataxic. He was sent to the hospital and on admission was comatose; the value for the blood sugar was 0.036 gm. per 100 c.c. Intravenous administration of 150 c.c. of a 10 per cent solution of dextrose produced prompt recovery. Two days later a similar attack began when breakfast was delayed; this was aborted by administration of sugar. Because of the hopeless prognosis further study was not carried out.

Case 14 (previously reported by Foley, Snell and Craig).—A man, aged twenty-eight years, registered on December 28th, 1934, and told of abdominal pain and weakness of a year's duration. Anorexia had developed and had progressed to complete aversion to food. The patient had lost 38 pounds (17 kg.) in four months. At no time had he had symptoms of hypoglycemia.

Examination disclosed a dull, lethargic, cachectic man with poor muscle tone, eunuchoid habitus, scanty hair with feminine distribution, dry skin and aciotic breath. General examination otherwise disclosed nothing abnormal. The value for blood sugar on arrival (one hour after a meal) was 0.043 gm. per 100 c.c. Subsequent values varied from 0.033 to 0.078 gm. At no time were symptoms ob-

served which were attributable to the low levels of blood sugar. A gastric roentgenogram revealed the presence of a duodenal ulcer; a roentgenogram of the skull revealed a large tumor of the pituitary gland; examination of the visual fields disclosed bitemporal hemianopsia.

Transfrontal craniotomy was performed and a large cyst of the pituitary gland was aspirated and partially removed. The pathologists made a diagnosis of chromophobe adenoma. Convalescence was uneventful. The patient was dismissed to the care of his physician in his home locality on January 25th, 1935. He died two months later. Details of the terminal illness or findings at necropsy were not obtained.

Although the data are incomplete, case 13 adequately illustrates the fact that occasionally the function of the liver may be sufficiently disarranged by carcinoma to permit development of the hypoglycemic syndrome. The history and physical findings in this case adequately rule out any possibility that the malignant process was primary in the islands of Langerhans.

Case 14 is typical of the abnormal carbohydrate metabolism sometimes associated with disease of the pituitary gland. Despite persistently low levels of blood sugar, which were often well within the range found in cases of islet cell tumors associated with hyperinsulinism, this patient had never experienced symptoms attributable to hypoglycemia.

NERVOUS HYPOGLYCEMIA

Nervous hypoglycemia is a designation applied here to hypoglycemia associated with functional neurosis or a hyperirritable autonomic nervous system. The patient as a rule is emotionally unstable. He complains of hunger and weakness before meals and may faint on occasion. If he faints, consciousness is regained in a few minutes, without treatment being necessary. He often complains of high or low pulse rates, irregular respiration and immoderate perspiration, but these symptoms are usually not worse during his episodes of hunger and weakness than at other times. He may be hungry and weak at meal time, but if the meal is not taken his hunger and weakness disappear in an hour or two. Especially notable is an absence of symptoms at night; the values for blood sugar after a night's fast are not abnormally low. In this type of hypoglycemia, the symptoms and low levels of blood sugar are related more to the taking than the withdrawal of food: the hypoglycemic phase of the blood sugar time curve of the dextrose tolerance test is abnormally low.

The failure of levels of blood sugar to remain at pathologically low levels during fasting is evidence that the pancreas does not secrete insulin continuously in such cases. Experiments with protamine-zinc insulin have revealed that a small and continuous supply of insulin is sufficient to cause abnormal levels of blood sugar among fasting sub-

jects. Evidence is completely lacking that the pancreas in cases of this type is intermittently provoked to excessive activity by nervous stimulation. It is more probable that when true hypoglycemia is encountered in such cases, it is a result of direct action of the nerves on the glycogen mechanism of the liver.

While considering hypoglycemic symptoms of patients without organic disease, it is perhaps desirable to consider the normal range of blood sugar.

Matthews determined the postabsorptive blood sugar of 117 normal persons and found that it ranged from 0.06 to 0.11 gm. per 100 c.c.; the values of 70 per cent fell between 0.07 and 0.08 gm. Hart and Lisa analyzed all determinations of blood sugar made over a six-year period at City Hospital, New York City. This included routine determinations in 21,000 cases. In about 11 per cent the concentration of blood sugar was less than 0.08 gm.; in 7 per cent, between 0.070 and 0.079 gm.; in 2.3 per cent, between 0.060 and 0.069 gm.; in 0.8 per cent, between 0.050 and 0.059 gm. and in 0.4 per cent less than 0.050 gm. Symptoms were not noted in the entire group with the exception of one case in which the level of blood sugar was 0.030 gm.

Sufficiently strenuous exercise may produce severe hypoglycemia even among trained and healthy athletes.^{14, 15} Patients who are nervous or high-strung seem less able than others to withstand effectively the strain placed on the homeostasis of the blood sugar by exercise. Michael performed several determinations of the blood sugar on each of thirty golfers in the course of eighteen holes of golf after they had eaten their usual luncheon. The values dropped to hypoglycemic levels (the average value was 0.054 gm. per 100 c.c.) between the ninth and fifteenth holes, or about two hours after the meal. The hypoglycemic period corresponded to a period of fatigue, mild symptoms of hypoglycemia and lessened efficiency, as reflected by poorer scores. Both the hypoglycemia and severity of symptoms were exaggerated among the poorer golfers, apparently because of tension, anxiety, and greater output of energy, and were far less marked than average among the expert golfers, who were usually well poised and relaxed. A second observation was made on the same group after they had eaten food which contained more fat and less carbohydrate; consumption of sugar or candy at the seventh and eighth holes resulted in elimination of both hypoglycemia and its symptoms, as well as much better scores.

It may be pertinent to suggest that many of these persons who have sporadic attacks of hunger,

weakness and so forth who are relieved by eating sugar, and are therefore presumed to represent hypoglycemia, the disturbance lies not in any abnormality of carbohydrate metabolism itself but rather in an abnormal sensitivity of the individual to physiologic excursions of the blood sugar level. As has been said, moderate activity of healthy persons may cause depression of the blood sugar to low normal or even to hypoglycemic levels, with or without mild symptoms of hypoglycemia. Also, both the depression of the level of blood sugar and the symptoms appear to be exaggerated by tension or anxiety. As this is true, it seems reasonable to assume that just as the nervous person overreacts to pain and other stimuli, he also overreacts, as compared to a normal person, to the level of sugar in the blood.

SUMMARY AND CONCLUSIONS

Five cases of hyperinsulinism caused by hyperfunctioning tumors of the islands of Langerhans are reported. In three cases typical hypoglycemic symptoms were induced by fasting. The symptoms were accompanied by low levels of the blood sugar, and were relieved by administration of dextrose. The fourth patient withstood a fast of seventeen hours but later was observed in a severe spontaneous hypoglycemic crisis. In the fifth case the condition was not recognized until necropsy. In retrospect the response of the coma to administration of dextrose seems to point to the diagnosis.

Nine cases of severe spontaneous hypoglycemia not associated with tumor of the islands of Langerhans are presented; four of them have been reported previously. In seven of the nine, exploratory operations performed at the clinic or elsewhere did not reveal a tumor of the pancreas. In the other two, abdominal exploration was not performed. In three, and perhaps in four of the nine cases, the symptoms of hypoglycemia were attributable to disease of the liver. In one, the cause was found to be atrophy of the adrenal glands. In one, which differed from the others in the complete absence of symptoms of hypoglycemia, a tumor of the pituitary gland was found. In three, the cause for the hypoglycemia could not be ascertained. In some cases in which no other cause can be determined, the spontaneous hypoglycemia may be due to organic lesions in the diencephalon.

The use of the term "hyperinsulinism" is restricted to those cases of severe spontaneous hypoglycemia in which disease of the pancreas can be demonstrated and in which operation on the pancreas may be expected to afford lasting relief.

The conception of functional hyperinsulinism is unsupported by evidence. The condition designated as "nervous hypoglycemia" does not require the

assumption that the pancreas is provoked intermittently to excessive secretion of insulin by nervous stimulation. Alternative explanations of nervous hypoglycemia are (1) abnormal depression of the level of blood sugar owing to stimulation of nerves to the liver; (2) exaggeration of ordinary physiologic fluctuations of the concentration of sugar in the blood owing to tension and anxiety, and (3) hypersensitivity to physiologic fluctuations of the level of the blood sugar analogous to hypersensitivity to other stimuli, notably that of pain.

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On Some of the General Problems of Old Age*

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IT IS VERY gratifying to note the marked increase in attention paid during the past two or three years to the problems of old age. Not only the medical profession but the general public now exhibit a deep interest in the fact that the relative number of old persons is rapidly on the increase in the United States, a situation that is giving rise to problems of far-reaching scientific, social, and political significance. When we realize that in 1930 there were 12 million children under five years of age in this country and $6\frac{1}{2}$ million persons over 65 years of age and that reliable calculations indicate that in 1975 there will not be more than $6\frac{1}{2}$ million children under five years of age though there will then be some 30 million persons over 60 and about 22 millions over 65 years of age, the importance of the changing situation becomes obvious. Many have asked why there should be this increase in the relative number of old people; several factors seem to be concerned, including (1) restriction of immigration, (2) rapid decline of the birth rate, and (3) a great increase in life-expectancy due to advances in preventive and curative medicine. The increased life expectancy has been chiefly for the younger; the gain for persons over 50 has been only slight in the past century and life-expectancy after the age of 60 has recently been diminishing. Only a few people live to be over 100 years old and I think it improbable that further advances in medical knowledge will very greatly increase the number of persons who live beyond the century mark. Greater length of life is scarcely to be desired; for the major involution that occurs in all human beings is necessary for the good of the human race. As Goethe once said "Death is Nature's device for securing abundant life." The surest way to live long is to select for one's self long-lived ancestors; for longevity is exquisitely hereditary. To a large extent the duration of life is predetermined by the constitution of the germ plasm at the moment the human ovum is fertilized by the sperm cell. As my friend Dr. James S. McLester of Birmingham put it: "The arc of the bullet is determined by the charge it receives before it leaves the muzzle." Though life can of course be ended prematurely by disease, by bad habits, or by violence, aside from these it pursues

the path that is determined for it by the inherent qualities of the genes from which it starts.

PHYSIOLOGICAL AND PATHOLOGICAL OLD AGE

The human body, no matter how good its inheritance or how fortunate it has been in avoiding infections, intoxications and traumata, is destined inevitably to decline in functional capacity as it grows older and, finally, it must die. Body cells undergo atrophy in later life; the interstitial tissue of the organs increases during senescence. In *physiological (or natural) old age* this process is very gradual, physical and mental deteriorative changes developing only slowly. On the physical side, we often see failure of accommodation in the eyes (presbyopia), graying of the hair, loss of teeth, diminution of sex desire and potency, increased fatiguability, stooping of the posture, decrease of weight, stiffening of joints, flabbiness of muscles, wrinkling of skin with development of senile keratoses, arcus senilis, some thickening and calcification of the arteries, shortness of breath on exertion, slowing of digestion with tendency to constipation and hemorrhoids, enlargement of the prostate with difficulty in starting the flow of urine, diminution of the endocrine functions, and some changes in muscular coordination. Even in physiological old age some mental disturbances are likely to become manifest. The older man begins to forget names, to be less receptive to new ideas, to show an increasing tendency to conservatism, to manifest some loss of memory for recent events, and to find sustained attention and concentration more difficult: often there is increased tendency to egocentricity, a greater stubbornness, a tendency to suspicion and sometimes pathological irritability and emotionalism. Despite these physical and mental infirmities that may be experienced in physiological old age, the old man or woman may still enjoy life. Normal persons desire to live long provided their bodily and mental health be not too greatly disturbed. You may recall the witty but somewhat paradoxical statement of Talleyrand—"Everybody wants to live long, but nobody wants to be old." Fortunately, in many persons who attain to physiological old age, the intellectual, artistic and spiritual faculties are long retained; I need only remind you of Sophocles who wrote his "Oedipus" when he was 90, of Titian who

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produced his masterpiece at the age of 85 and lived to be 99, and of Benjamin Franklin who was fruitfully active until the age of 82; many other interesting examples could be cited. Shakespeare's Adam, in *As You Like It*, is a good example of physiological old age; he looked old but was still strong and lusty and Shakespeare assumed that this was due to the fact that in youth he had lived hygienically, never wooing "the means of weakness and debility."

Desirable as physiological old age may be, everyone would hope to escape *pathological old age* for no one wishes to be a serious burden either to himself or to others in later life. Severe bodily diseases (cardiovascular, renal, neurological or cancerous) may make later life almost intolerable. Even worse than the physical disorders of pathological old age are the presenile and senile psychoses that may develop with catastrophic effects upon the personalities of those who suffer from them. I need only mention simple senile dementia, presbyophrenia, Alzheimer's disease, Pick's disease, arteriosclerotic dementia, and Stern's disease (bilateral symmetrical degeneration of the optic thalamus), to illustrate what I mean.

Shakespeare, in his *King Lear*, gave us a marvellous picture of second childhood, of pathological old age in the form of senile dementia. You will recall that Lear knew that he had become a foolish, fond old man, fourscore and upward, feared that he was not in his right mind, was ignorant of where he was, did not know where he had lodged the night before, nor whence the very garments that he wore had come:—the old fool had become a babe again!

EDUCATIONAL, SOCIAL AND POLITICAL RELATIONSHIPS OF THE OLD AGE PROBLEM

Because of the marked relative increase in the number of older people in our population there can be no doubt that serious economic problems will have to be faced. Manual workers as they grow older often find themselves in a bad plight. Many men of 40 or 50 are laid off because they cannot maintain the pace of modern speed-up processes; many of these are forced to remain in the ranks of the unemployed for they find it difficult or impossible to obtain other jobs, being forced to give place in all occupations to younger and more vigorous men. During the past ten years the prolonged depression has also made it difficult for youth to find work and the social problems that have resulted have become very serious. Fortunately, at the moment, the number of jobs available has undergone increase because of the magnitude of our defense problem.

Compulsory retirement from many occupations

at a certain arbitrary age irrespective of individual variations of capacity in later life may cause great depression and discouragement. When an older person feels that he has been laid on the shelf he is all too likely to grow old rapidly and dangerously. One of our main problems is to find out how to make use of the skills older people still possess, for their own good and for the good of society in general. To impair the morale of our older people is unwise from a social standpoint. Feeble attempts to overcome the difficulty have been made in the form of old-age pensions and old-age security laws; but you cannot satisfy the old by giving them a little money when they are no longer gainfully employed. We have to find out how to make them feel that they are still needed, and that their skills, their knowledge and their wisdom are of real value to society; for in no other way can we expect them to be happy. Unless we devise national measures for the solution of these old-age problems we may see very serious political repercussions, for elderly voters are becoming so numerous that they will be able to put enormous pressure upon State legislatures and upon Congress. Notable examples of such pressure were seen recently in California and in Ohio; if the legislatures of those States had been unwise enough to yield to such pressures they would have been forced into bankruptcy.

COMMENTS UPON THE CARE OF THE AGED

Some of you will have heard the excellent paper read by your secretary, Dr. Northington, at the meeting of the Mecklenburg County Medical Society in March of the past year, in which he advocated conservatism in the medical care of the old and warned against unnecessarily extensive diagnostic studies and against abrupt changes in dietetic and other habits.

As life advances, the perfection of action of the inherent regulatory functions gradually diminishes; people become more susceptible to heat and cold, their capacity to work and to sleep at high altitudes becomes less, the capacity of the circulatory system to adapt itself grows less adequate, the febrile reactions during infections are less than in youth, and the mortality rate from certain diseases increases rapidly. The knowledge we have gained of the slow decline of the bodily functions makes it clear to medical men who care for the old that they should see to it that activities in their entirety should be very gradually adapted to this decline, for abrupt and profound changes in the mode of life of a man are, as Dr. Northington emphasized, likely to be harmful. At middle age all sensible people should be taught to think of what later life may have in store for them, and should begin to make the adaptations that are desirable rather

than postpone these to a period when the changes will have to be made rapidly rather than by degrees. The phenomena of physiological old age are inevitable, though they vary somewhat as the germ-plasm varies, and also as the environment varies.

Old people who are relatively well should whenever possible live in their own homes for, as a rule, they will be happier there than living with relatives or in homes for the aged. An elderly woman wants to have her own Lares and Penates about her.

Old people who are well-to-do often decide to spend their winters in the South and their summers in the North. When compelled to live in one climate the year round care should be taken to protect them adequately from extreme cold, on the one hand, and from excessive heat on the other.

When old persons become chronically ill or markedly enfeebled they can be greatly helped and comforted by proper nursing. Such persons do best to sleep in a bed about two feet high from the floor with a comfortable mattress protected in the middle by a piece of rubber sheeting or oil-cloth. Daily care of the skin and of the mouth and teeth is important. Bedsores should be prevented by change of position in bed, by avoiding prolonged pressure upon any part, and by keeping the lower bedding free from wrinkles and from crumbs of food. Old patients who are ill and have to be kept in bed should not remain too long in the strictly recumbent position because of the danger of hypostatic pneumonia; if able they should be allowed to sit in an easy chair occasionally or at any rate the use of a back-rest in bed can be helpful. Rest in bed is, however, often necessary for old patients who are really ill or greatly fatigued. The nurse will see to it that the bowels are evacuated regularly and that the bladder is emptied routinely. When insomnia is marked it is best to avoid hypnotics like bromides and barbiturates wherever possible as older people do not tolerate them well; some find that a little whisky and water at bed-time acts as a sedative, or that a glass of hot milk at 10 p. m. promotes sleep. An electric lamp should be at the patient's bedside and a bell should be accessible by means of which a nurse or some member of the family can be summoned.

The old should be cautioned against accidents; only too often we meet with fracture of the neck of the femur from a slip in the tub or on the bathroom floor. Fortunately, newer surgical measures have greatly improved treatment of this fracture.

Occupation for older patients should be care-

fully selected. Men may enjoy reading or listening to the radio; women may wish to knit, crochet or embroider. An electric sewing machine may be a godsend to a grandmother.

Nurses and others in attendance upon the old should be cheerful and encouraging, and should try to gratify even the trivial desires of the patient. The patient's interest in personal appearance should be kept up. Men should shave regularly, keep their hair tidy, and, if up and about should have their clothing frequently cleaned and pressed. Women should be regularly manicured, have a hair wave occasionally, and be encouraged to keep themselves well-groomed by telling them how well they look.

The diet should undergo some change as life advances. Most older people tend to lose weight for old age is proverbially the time of "the lean and slippered pantaloons;" but undue emaciation should be guarded against as well as obesity. It is better to be a little under- than over-weight when old. The diet should contain adequate amounts of protein, carbohydrate, animal fats, mineral salts, vitamins and water. Many persons, however, become faddists about foods, because of the extravagant claims of charlatans or because of the advice of well-meaning but over-apprehensive relatives who insist upon special diets. If an all-round diet of meat, chicken, fish, milk, potatoes, brown bread and butter, green vegetables, fruit, simple desserts and water be regularly taken there will be no food deficiencies, provided the processes of digestion and absorption are not too much impaired. Such a diet contains all necessary vitamins and mineral salts. The public has been almost too greatly "vitamin-conscious" in recent years; the family physician, by studying the diets of his older patients, can make sure that they lack none of the essential food elements.

Endocrine deficiencies do sometimes occur in old age but marked lack of hormones is less common than the literature would lead one to believe. Diabetes and hypothyroidism should of course not be overlooked. Attempts to benefit old people by the administration of sex hormones are frequently made, but the help derived from them has been less striking than had been hoped for.

Surgery in the old is to be avoided, of course, wherever possible; but it is amazing to find how well aged patients tolerate even major surgery, if they are properly prepared before operation and are given good care afterwards. Removal of the prostate, transurethral prostatic resection, resection of the stomach, hysterectomy, and operations for removal of cancer and for strangulated hernia, all

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CLINIC

Conducted By

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ON JANUARY 12th, 1917, a 20-year-old school teacher complained of pain in the back of her neck and a general eruption. She stated that 3 days previously 4 lumps appeared in the back of her neck. A 5th one appeared the evening before she consulted me. Her neck had been stiff and sore from the beginning of this trouble, her appetite and sleep poor. She had a slight sore throat of a few hours' duration. There was slight photophobia. There were no gastrointestinal, cardiorespiratory or urinary symptoms, and no nervous symptoms other than the pain in her neck. She had no ear trouble. She had had a very severe attack of measles the previous spring, in which I had attended her. Her past history was otherwise unimportant, her habits good. Her father had arteriosclerosis and her mother amebic dysentery. She was an only child.

The patient appeared very comfortable. There was slight lacrimation and congestion of her eyes, but her eyes are especially susceptible to all influences. Her nose, ears, tongue and throat were negative. There were no Koplik's spots. She had a pale, rose-pink, rather morbilliform general eruption. There was very marked enlargement of the posterior cervical lymph nodes, which did not fluctuate on palpation. She had a normal temperature. Her pulse rate was 94, her respiratory rate 20. A diagnosis of *German measles* was made, and it was learned that she had been exposed to at least 5 persons who had just recovered from German measles. As she was comfortable, no treatment was given, and she made an uneventful recovery.

A 24-YEAR-OLD school teacher consulted me Oct. 24th, 1927, complaining of sudden transitory dimness of vision. A week before she had had her first attack, when she got dizzy and couldn't see much, though she had light perception. This was followed at once by nausea but no vomiting. She had not fainted or lost consciousness in any of her attacks. The first attack lasted 10 or 15 minutes. She had a slight attack the next day lasting two minutes or so. Two days before I saw her, while she was in a stand watching a football game, facing the sun, she had two short attacks in rapid succession. She goes through these attacks sitting up, and never falls or has to lie down. She ate a honeydew melon before her first attack, but nothing unusual before the last two attacks. In 1924 she had a tonsillectomy and a refraction at this time by a good ophthalmologist, who told her she was near-

sighted, but didn't need glasses. She had recently had a little unusual eyestrain grading a lot of poorly written 4th grade papers. Her sister stated she had noticed that patient's eyes were puffy two days previously. Reading a long time would cause headache. There were no other symptoms of importance. Her personal and family history threw no light on her condition.

Her physical examination was essentially negative, including examination of her eyegrounds. T. 98.6, p. 76, r. 15, b. p. 116/64. A chamber specimen of urine (just at the end of a menstrual period) showed many pus cells and a trace of albumin, but was otherwise negative. No diagnosis was made at this time, but she was referred to Dr. O. B. Bonner for ophthalmologic examination. He reported a slight increase of intraocular tension in her left eye, though there was no cupping of the optic disc. His diagnosis was a mild *acute glaucoma*. He kept her out of school a week and used pilocarpine. She was treated successfully by him. Another specimen of urine a few days later was negative.

Comment: Acute glaucoma may be a very serious emergency. This case was not of great severity, but it is conceivable that it might have become so and even been destructive to her sight, had she not had a fairly early diagnosis and treatment. The lesson here seems to be that one should always refer a patient promptly to a specialist when unable to make a diagnosis. Perhaps there is another lesson, too, that is less often recognized by physicians. It is a very simple matter to test the intraocular tension by palpation of the closed eyes. However, slight differences in tension are not likely to be recognized unless the physician palpates the eyes of many normal patients, just as slight changes in breath sounds are unrecognized unless one listens to many normal chests. How many of us, in a general physical examination, employ this simple procedure? For mere visual disturbances without knowing the underlying pathology, we are apt to tell the patient to see an ophthalmologist at his convenience. If, however, we recognize glaucoma, we should refer for examination and care after the manner of an old teacher of mine who used to say when I had failed to finish some allotted mathematical problems—"You will complete this work, Sir, at your earliest inconvenience!" If no ophthalmologist is promptly available, the physician should instill a miotic when a frank glaucoma is recognized, as this will give the patient time to get to an ophthalmologist at a distance with less risk of impairment of sight. However, the differential diagnosis, in such a case, must be kept in mind, between glaucoma and iritis, as the emergency

treatment of the two conditions is precisely opposite—miotics being indicated in glaucoma, mydriatics in iritis.

In mild cases, such as the one cited, many of the diagnostic criteria present in severe glaucoma will be absent. In these cases, however, there is less urgent need of drugs affecting the pupil. In the presence of a dilated, oval, fixed pupil when no mydriatic has been used, coupled with obvious increase in intraocular tension, a shallow anterior chamber, perhaps a turbid aqueous and a steamy insensitive cornea, the physician should not hesitate to instil a miotic if a competent ophthalmologist is not at hand. For those of us in the larger towns, however, the safest plan is to get the patient *promptly* to a good ophthalmologist and to have him take responsibility for the diagnosis and treatment of the case.

EVOLUTION OF THE TREATMENT FOR ABSENT VAGINA

(R. T. Frank, New York City, in *Jl Mt. Sinai Hosp.*, Jan.-Feb.)

Absence of the vagina is fairly common. The vulva appears normal. A dimple or small blind pouch is round in the region of the hymen. In almost every instance the uterus is represented by a small, solid, muscular rod. The tubes may or may not be canalized. The ovaries are usually normal.

Dupuytren burrowed into the urethrorectal septum and inserted plugs. The result was disappointing. Heppner, in 1872, introduced skin flaps, the canal later contracting. Attempts to line a preformed canal with skin grafts likewise failed. Gersuny, in 1897, transplanted the anterior wall of the rectum with passable result.

Baldwin, in 1907, isolating a loop of the ileum, reestablishing the continuity of the bowel, then fastening the double loop of the intestine between urethra and rectum, and later made the canal single by applying a crushing clamp. The mortality was 17½% and several fatalities were never reported.

Popoff, Schubert, and others devised a difficult but less dangerous procedure. The lower rectum was liberated and transplanted into the urethrorectal septum; the lower sigmoid was liberated from below and united with the remaining anal portion of the rectum—3 deaths in 53 cases. Rectovaginal fistulae, incontinence and other disagreeable sequelae resulted. Others devised less dangerous but also less effective methods which utilizing pedicle flaps obtained from the hymen, fourchette, and vulvar skin.

In 1925 several cases of absence of vagina presented themselves. Geist and I made tubular flaps from the inner regions of the thighs to fashion a complete skin covering for the newly formed canal. While this operation proved satisfactory, it entailed a 3-stage operation with at least 8 weeks of hospitalization.

The time for any intervention is preferably between 18 and 20 years.

I have always been impressed by the ease with which it was possible to separate rectum from urethra after incision of the hymen and superficial fascia. In 1935 a case presented itself in which there was a deep dimple, apparently the result of vigorous attempts at coitus; such attempts usually end in dilatation of the urethra, coitus taking place through this canal, sometimes resulting in

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SURGICAL OBSERVATIONS

OF
DAVIS HOSPITAL STAFF
Staverville

THE POST-HOSPITAL TREATMENT OF PATIENTS WHO HAVE HAD A TRANSURETHRAL PROSTATIC RESECTION

It is unfortunate that a general impression seems to prevail among the laity and some members of the medical profession that a transurethral resection is a minor operation, that the results are quick, sure and certain, and that relief is immediate and permanent. Such, of course, is not the case.

It is true that in patients who are in good general condition and whose kidney and bladder function is not impaired and who do not have cancer, a transurethral resection usually gives fine results. Naturally, the success of this method of treatment is not so satisfactory in patients who have waited a long time before having anything done, whose kidneys are greatly impaired and who have hypertrophy of the wall of the bladder with a cystitis which has become chronic. Often too there is a dilatation of the ureters, great impairment of kidney function and sometimes kidney involvement that makes a good result almost impossible. Associated with conditions of this kind are sometimes cardiac disability and a general impairment of the body function, especially a generalized arteriosclerosis and often other complications which add to the hazard and make the outlook doubtful.

The care after prostatic resection is not always a simple thing. Every possible therapeutic aid to build up the patient's general health and strength should be used both before and after operation and continued after the patient returns home, and certain special instructions are to be given the patient and those with whom the patient lives in order to get all possible help for best results for the patient.

To expect the patient and members of the family to remember the details of verbal instructions is unreasonable and, for this reason, we have worked out a letter of instructions which is given to each patient on leaving the hospital. It is not intended to take the place of medical attention but to bridge the gap between what the patient should do for himself and the treatment that is given by his home doctor.

We have found that these detailed instructions, when carefully followed by the patient, will do much toward obtaining a good result and will enable him to avoid many complications which might

otherwise develop.

The following instructions are given to patients who have had this operation:

Principles to be observed:

(1) It is important that you take proper care of yourself for a long time after you return home.

(2) Patients sometimes return home with the idea that they can do as they please, eat everything they wish, go about freely and take long automobile rides, all of which is erroneous. You should plan for several weeks to several months of quiet, peaceful living, depending upon the advice given you by the doctor. Some patients will require more prolonged rest than others, depending upon the condition found at operation.

(3) For the first six weeks, it is especially important that you take extremely good care of yourself, and even after that you should be careful. During this time, internal healing is taking place, and the bladder irritation usually becomes less, and the frequency of urination decreases. To get the best result from rest, you must undress and get in bed and rest for a while morning and afternoon—at first for an hour or more in the forenoon and at least two hours in the afternoon in bed. You should sleep in a room that is comfortable—not too warm, not too cold—and in a good, comfortable bed.

(4) Moderation in everything should be your guide, especially as to exercise, straining or lifting. An unusual strain might tend to cause bleeding into the bladder.

Specific directions:

1. Drink plenty of water all through the day. This helps the kidneys and bladder flushed out and aids in the healing process.

2. Never use any drink containing alcohol—no beer, no wine, no liquor. Instead, drink pure water, orange juice, lemonade, buttermilk and the various fruit juices that agree with you. While it is permissible to drink a little tea or coffee, it is better to leave these off. Take no fountain drink except orange juice and the other fruit juices that are permissible.

3. Keep the bowels regular. This is important. Should it be necessary for you to strain at stool, there is danger of this causing bleeding into the bladder. It is sometimes necessary for a patient, in addition to taking laxatives, to use enemas to remove the fecal matter from the lower bowel. In the rectum, the impacted fecal material may press against the prostatic area and cause pain, retention of urine and distress generally, if it is not removed. You can avoid this trouble by keeping the bowels regular. Mineral oil is helpful and may be taken twice daily; but remember this is not a purgative,

not even a laxative, merely a lubricant, and it may be necessary for you to take some laxative in addition to this. Ask your doctor.

4. Do not overeat. Take a moderate amount of plain, wholesome food, but greasy and highly seasoned foods are to be taken sparingly if at all. *Eat foods which you have found to agree with you.* Vegetables, cereals, milk, especially buttermilk, eggs and whole-wheat bread are all right. "Enriched flour" contains certain vitamins which have been added, and bread made from this flour is preferable. Liver may be eaten twice weekly for its blood-building effect. Fish and chicken are seldom found to disagree.

5. Avoid straining or overexertion. Do not take long automobile rides. Never ride horseback. Don't lift heavy things. Lead a very quiet existence for at least six weeks after operation.

6. Avoid getting chilled or overheated.

7. Sometimes there will be a little blood in the urine. When this occurs, you should go to bed immediately and be at as nearly absolute rest as is possible. Call your doctor. Go on a liquid diet, assure bowel movements without straining. A little bleeding is not unusual and should not alarm or frighten you. If bleeding is severe you should return to the hospital for local treatment.

You will often notice shreds in the urine, possibly for as long as several months you may have occasional flakes of blood or possibly little spots of blood in the urine. This does not mean there is anything very wrong. Your home doctor will advise you what if anything to do about this.

Remember that the success of the operation depends, to a great extent, on the care you take of yourself after you return home.

Once in a long while the bladder will fill up and give considerable pain. Call your home doctor immediately. Catheterization usually will give prompt relief and seldom will it have to be repeated.

There may be certain treatments that you should take on returning home. Be sure that you understand what you are to do and what medicine you are to take.

The impression has gone out that this operation is a minor operation. While it is possible to get out of bed in a short while, it is safer for many patients to remain in bed eight to ten days or longer on returning home.

There will often be a burning sensation in the bladder region on voiding. Sometimes there is pain just after emptying the bladder. This is not unusual, and it will gradually subside after a while.

At first you may void frequently during the day and several times during the night. As the internal

healing progresses, this becomes less frequent. Don't be alarmed about this. Just keep up the general treatment as advised and you will improve.

Watch your weight. If you gain or lose too much, see your doctor *at once*.

Avoid coffee and tea; at any rate, be moderate in the use of these.

It is better not to use tobacco in any form.

In some cases a special diet may be necessary, especially for patients who have diabetes. In these cases it is important to follow the diet given you, *and follow it strictly every day*.

You should return to the hospital at regular intervals for an examination. Some patients should come more often than others. Before you leave the hospital, ask your doctor how often you should return for recheck or for any treatment that might be advisable.

If there is anything about which you are in doubt, be sure to ask the doctor before you leave the hospital. If you have any trouble of any kind after you return home, get in touch with your home doctor and he will advise you, or return to the hospital immediately if your home doctor is not available.

You should read this over and over again until you are thoroughly familiar with the instructions.

CARCINOMA OF THE PROSTATE GLAND

It seems that carcinoma of the prostate gland is increasing in frequency. At least we are finding more cases than ever before.

Recently a man, 37 years of age, appeared with a trouble in the region of the lower end of the left ulna, evidenced by some swelling and some pain and tenderness in this area. X-ray examination revealed what appeared to be a malignant growth of an area $1\frac{1}{2}$ inches long an inch above the lower end of the left ulna.

Tissue was taken for biopsy, and this proved to be cancer. The pathologist suggested this might be secondary to a primary tumor in the prostate gland. This is evidently correct.

In the clinic we have found a number of cases of carcinoma of the prostate gland which were incurable from the standpoint of offering an operation that might give permanent relief. In all these cases there was complete obstruction to the outflow of urine, catheterization being necessary.

In all these cases it has been possible, so far, to relieve the obstruction by a transurethral resection, which enables the patients to return home in a few days and to be up and about, almost as usual. The general physical and mental improvement after these operations is remarkable in many instances, and makes patients feel that life is again worth living and, these old men are enabled to enjoy the

remaining months of living in comparative comfort and ease.

Occasionally a second resection is necessary in these incurable cases of cancer of the prostate gland, but the patients are able to go through this without much distress and again return home in a few days with the obstruction removed and passing the urine freely and painlessly.

Transurethral resection for relief of complete obstruction of the urine in inoperable carcinoma of the prostate is far preferable to continuous catheter drainage through the urethra or continuous drainage from a suprapubic opening.

This again reminds us that every patient with suspected prostatic trouble deserves and should have a thorough and careful examination.

(ABSENT VAGINA—From P. 136)

permanent incontinence of urine. In this instance the efforts had resulted more successfully. The septum between urethra and rectum in absence of the vagina can be separated by the introduction of two fingers after the hymeneal membrane has been incised, and the resilience and softness of these tissues had repeatedly struck me as encouraging. I had the patient introduce heavy glass tubes, first of small diameter, later increasingly larger, to enlarge the opening made by coitus and to my surprise and gratification, within a few weeks a canal, $7\frac{1}{2}$ cm. in length, was developed. Since then 8 further cases have been completed by this simple, non-operative, ambulatory method of treatment. Canals fully established remain lined with soft, yet resistant mucosa, which has only a moderate, non-irritating secretion. These canals retain their full length and show no tendency to obliteration or stenosis.

This simple procedure has proved uniformly successful in establishing potentia coeundi and in restoring the self-respect and happiness of the afflicted individuals.

SUGAR AS A PAIN-RELIEVER

(Jose Barbosa in *Brasil-Medico*, July)

After intravenous injection of 50% solution of glucose prompt cessation of the pains was obtained in all cases of angina pectoris or gastroduodenal ulcer. Without any exception it acts superior to any anesthetic, even morphine, by the promptness with which it controls the painful attack.

AMINOPHYLLINE intravenously in acute coronary thrombosis may relieve pain more effectively than a narcotic. Its value may be enhanced by the simultaneous intravenous administration of hypertonic solutions of glucose. It should be given at the time of the attack in a dose of 0.48 gm. and continued b. i. d. in the same dose until the acute symptoms subside, then intravenously once daily for one to two weeks, or orally in daily doses of 9 to 15 grains over a prolonged period of time.—*McMahon & Nussbaum*, St. Louis.

DISLOCATION (FORWARD) OF 4TH. CERVICAL VERTEBRA BY CATATONIC POSTURE.—A case is reported difficult of diagnosis by x-ray examination, reduced by application of Crutchfield's tongs to skull and attaching a 40-pound weight. N. I. Giannestros, in *Jour. of Med.*, Jan.

FREQUENTLY OVERLOOKED, as a cause of precordial distress, is arthritis of the dorsal spine.

D. W. Ingham, in *Med. Rec.*

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

A CIVIC TRAGEDY

FROM the hands and from the pen of Dr. Hubert A. Royster of Raleigh, I have just received a copy of the booklet in which he sets forth an account of the birth, the development, the life, and of the assassination of an institution.

The institution was a school. It was the Medical Department at Raleigh of the University of North Carolina. The school was opened for the matriculation of students in September, 1902. Its doors were closed after graduation of the class in June, 1910. The school was brought into being by the Trustees and by the President of the University of North Carolina. It was assassinated, for want of protectors, by organized alien might. The destructive power was a so-called philanthropic organization—the Carnegie Foundation—and the power was conjointly wielded through the American Medical Association and the Carnegie Foundation. Dr. Colwell, Secretary of the Council on Education of the American Medical Association, and Dr. Abraham Flexner, of the Carnegie Foundation, made a brief visit to the office of Dr. Royster, Dean of the Raleigh School, spoke their words of disapproval of the school, and departed for the region out of which they had come. They did not inspect the school; they did not visit Raleigh for that purpose. They called upon the school's Dean merely to inform him that his school was proscribed. The school did not die of a disease; it was assassinated by the might of alien money. Though it was only an infant, and altogether worthy of a protector, no one came to shield it and to sustain it. The school died for want of civic sustenance and protection against the hands of alien killers.

What has become of the Carnegie Foundation? Has it ceased to attempt to ingratiate itself and to bring deification to its creator by pensioning a few college and university senescent professors?

A campaign of destruction was organized and released against many of the Nation's too-many medical schools early in the present century. Lack of a certain size seemed to damn and to doom a medical school to death. Smallness seemed to imply lack of virtue and mere bigness to carry with it didactic efficiency. And the insistence upon quantum carried with it the demand for an endowment in terms of millions and clusters of buildings

and of colonnades. I do not recall that much thought was given to an effort to find out if those who were engaged in teaching were fitted to teach. If the Foundations and the Malefactors of Munificence could gain control of the schools they would have both the opportunity and the time in which to deal with the teachers.

Now in a Federal Court Room in Washington, some of the officials of the American Medical Association are feeling the impingement of the might of power—that of the United States Government. I wonder if those officials are reflecting occasionally upon the experiences of many medical colleges and the teachers in them within the first decade or so of the present century? Long ago the Preacher observed the cycloidal tendency of things, and he recorded, with fatalistic-sounding finality, his own opinion: that which hath been, it is that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun.

There have been for several years those who have feared that medicine was being brought under the control of certain organized groups; there are today many who realize that the present Federal Administration has determined to exercise dominion over all the phases of medical activities. Man may be instinctively urged to tyrannize over his fellow-mortals. What a pity that medical school in Raleigh was not sustained by the state and by the University!

I am not going to write the name of a single matriculate or of a single graduate of that school. The first student to register, on September 9th, 1902, became a graduate of the school in 1903. He has been for several years one of the best known physicians in the English-speaking world. He is one of the best teachers medicine has ever known. Had the school, during the seven years of its existence, educated only that single matriculate, the life of the school would have been justified and the school would have been made immortal. A number of the school's graduates have become distinguished. Many of them developed into skillful practitioners. Almost without exception they have all done well.

During the brief life of the school it had eighty-seven matriculates. Seventy-six of them were graduated. At the first commencement, in 1903, four were graduated; the next year, four; in 1905, nine were graduated; the number steadily increased until 1910, the last year, when the number of graduates reached fourteen. What a pity the school was not sustained and continued! The death of it—the slaughter of it—constitutes one of the civic tragedies of North Carolina.

Dr. Royster, mere youngster though he was,

served as Dean of the school and also as a member of the teaching staff, during its life. The other members of the faculty were the leading physicians of Raleigh. Most of them had sound academic and medical educations and most of them were experienced in teaching. All of them gave their services to the school. None of them was remunerated. Why was the school not sustained and continued?

Since that school was launched in Raleigh the educational life of North Carolina has experienced a rebirth. Large, state-supported schools have come into being since the Medical School in Raleigh was closed. And most of the state-supported schools, from the University down to the smallest public school, have been built again. Why was the Medical School in Raleigh allowed to perish or to be killed? That was a shameful experience in the state's life.

And whoever you be, whether physician, official of North Carolina, educator, or plain citizen, lay your hands, I beg you, upon a copy of the pamphlet. I know you will read each of the seventy-two pages of it. Dr. Royster's address at Chapel Hill in February, 1940, to the Alumni of the School, will tell you of its brief, brave and productive life. Dr. Royster, gifted in many ways, is as skillful with his pen as with his surgical instruments. His own account of anything would be informative and interesting. He tells all about the school. And his historic address is followed by a biographic sketch of sixty of the seventy-six graduates of the school. I should be happy to know by the use of what psychological trick Dr. Royster induced sixty doctors to comply with his request for a sketch of themselves. But they wrote about themselves, generally briefly, and without jarring the walls of Jericho. Every medical organization, small and large, should keep a biographic sketch of each of its members.

I do not think of North Carolina as an aggressively progressive state. Many citizens of the state are progressive, a few of them even outside the domain of matter. But the state's exhibition of apparent progressive activity has been mainly in the field of matter. The progressive spirit—and progress is a matter of spirit and of intellect—has its motivations in the intellectual domain. In spirit and in thinking North Carolina as a civic organization is profoundly conservative. She merely boasts of her liberalism; she puts little of it into practice. Had the state been far-seeing she would have known that soon there would be somewhere within the state a degree-granting medical school. The state would have and should have protected and sustained and improved the University's Medical School at Raleigh. But the people were with-

out that vital vision, and—the school—and a portion of the state—perished. What a tragedy!

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

THE COMMON COLD

THE drinking of a level teaspoonful of table salt in a glass of cold water at the onset of a cold, repeated several times the first day, will do more good than any of the alkaline drinks.

Two tablespoonfuls of strained honey with the juice of one-half of a lemon in a glass of hot water, sipped at bedtime, is an ideal drink in the treatment of colds.

Cathartics decrease the body fluids, deplete the patient, and prolong a cold.

Coughs lasting more than two weeks, unless proved otherwise, can be considered due to a sinus infection, antra most frequently. With each antrum infection there is some ethmoid infection, but once the antrum infection is over with the ethmoid cells usually clear.

I inject the antra with 27% iodine in oil every 10 to 14 days in the subacute or chronic cases, and watch the progress by roentgenograms. If the infection persists, a large permanent opening is made into the antrum under the inferior turbinate—in children under two or three of age in the middle meatus. Antra have a tendency to become water-logged by too frequent irrigations. Very often a patient who has had frequent or daily irrigations will improve by merely stopping treatment for 10 days and permitting the cavity to dry out.

If bronchiectasis is suspected, after cocainizing the nose and trachea, the tongue is pulled forward, and the oil injected into the nose and allowed to flow into the bronchial tree, this followed immediately by roentgenograms.

Many children have frequent colds and hypertrophy of the lymphoid tissue on the posterior pharyngeal wall. This finding usually is an indication for small doses of iodine: if the membranes are particularly pale and swollen, one-fourth to one-half grain of thyroid with one or two grains of iodine per day. For sweets and soft drinks honey makes an excellent substitute, which does not ferment in the intestinal tract.

Vaccines give no assurance of immunity to colds. Vitamins are important to the general health and in the prevention of frequent colds.

Breakfast is the most important meal of the

day. Many people have nothing more than a portion of carbohydrate and coffee. Eating a good breakfast should be cultivated from childhood.

SURGERY

Geo. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE AMERICAN BOARD OF SURGERY

WHEN a graduate in medicine is certified by any State Board of Medical Examiners, whether by reciprocity or by examination, he becomes entitled to obtain a license to practice medicine and surgery in that state. This is granted although it is well known that no medical school can possibly give adequate surgical training to undergraduate students in the four-year course. When the physician without special surgical training attempts to do major surgery the results to the patient are bound to be disastrous.

Composed of eminent surgeons, the American Board of Surgery has been organized by the leading surgical associations of America to examine applicants and to issue certificates to those who are found qualified to do general surgery acceptably. The Board has no legal status and appearance before it is not compulsory. However, as time passes its influence must increase, for soon it may be necessary for a surgeon to be certified by the Board before he can serve on the staff of any standardized hospital.

Justification for the American Board of Surgery must ultimately depend upon its accomplishments. Thorough investigation of the general training and the moral character of the applicant, examination both clinical and didactic of his surgical qualifications, personal observation of his judgment, diagnostic ability and operative technique should enable the board, through its agents, to fairly well determine the fitness of the applicant.

Although it has existed only about four years an unexpected benefit from the activities of the Board has already resulted. It has been found that many applicants are sadly lacking in basic knowledge of surgical pathology. The ability to recognize and to identify gross disease in tissues at operation is fundamental, if the surgeon is to act with intelligence, for proper operative procedure must be dependent upon diagnosis and understanding. Perfection in maintaining aseptic technique may make an operator; alone, it can never make a surgeon.

Since the matter has been called to the attention of teachers of surgery in the medical schools, surgical pathology will no doubt now be sufficiently

stressed so that this apparent lack of basic surgical training will soon be overcome.

We believe that the National Board of Surgery is doing good work. Ultimately every one intending to do major surgery, to be eligible for staff appointment in an accredited hospital, will have to be certified by the Board. Indeed, certification is going to be demanded by the accredited hospital of every surgeon seeking its facilities for operating even upon his private patients. When this condition prevails it will make a new and a better era, for it will do much to protect the patient against incompetency. Is it asking too much of the surgeon for him to prove that he is qualified?

REFERENCE

GRAHAM, E. A.: Report of the American Board of Surgery, *Annals of Surgery*, Dec., 1939.

PUBLIC HEALTH

N. THOMAS ENNETT, M. D., Health Officer Pitt County, Greenville, N. C., *Editor*

THE PRE-SCHOOL EXAMINATION AND DIPHTHERIA VACCINATION

THE regular spring pre-school examinations in North Carolina will soon be under way. For children who have not been previously vaccinated, the pre-school clinic is convenient for this purpose.

In spite of the North Carolina law passed in 1939 requiring that all children "between 6 months and 12 months" be immunized against diphtheria, and that all children "between the ages of 12 months and 5 years" be immunized against diphtheria unless previously immunized, thousands upon thousands of children in the State are unimmunized. Many factors are responsible for this lack of compliance. Probably the chief factor is lack of information. Expense should no longer be a factor, for we understand that the State Board of Health furnishes free diphtheria toxoid to all physicians and to all health departments throughout the State.

If insufficient information of the situation is responsible for the high morbidity and the high mortality from diphtheria in North Carolina (about 7% of all diphtheria reported in the United States in 1939 occurred in North Carolina), then our first objective must be supplying this information.

Our local health departments and local physicians are in a strategic position to carry on this program. The local health departments are paid out of public tax money to carry on a preventive medicine educational program in season and out of season.

As a local Health Officer, we are ready to admit that our skirts are not entirely clean as regards such a program; though we have—through the daily press, through the schools, through the local medical society and through the health department nurses in their daily rounds—urged diphtheria vaccinations. We understand that another agency has recently become very active in the matter of diphtheria vaccination, and this agency is the North Carolina State Parent-Teacher Association. We also understand that this Association is urging each one of its local associations to inaugurate a *special* diphtheria clinic in addition to the pre-school clinic, a clinic primarily for infants and babies, the age at which vaccination counts for most.

When we have been asked by the president of a local Parent-Teacher Association to hold such a clinic, we have agreed to do so provided the Parent-Teacher Association obtained the approval of the local physicians.

In a very timely paper entitled, "The Diphtheria Situation in North Carolina," by Dr. Aldert S. Root, a pediatrician of Raleigh, read at the Post-Graduate course in Obstetrics and Pediatrics given at Wrightsville Beach, last June, Dr. Root, after making a number of explanations as to the family physician's difficulties in vaccinating all the babies under his care, said: "But he (family physician) has failed to impress upon these people the importance of having their children taken to a health center where they can have toxoid given free of charge, if necessary."

We believe that most family physicians when their attention is called to it, are thoroughly willing to coöperate in this respect.

The chief purpose of this article is to request the physicians throughout the State to give their full support to the special infant and baby diphtheria vaccination clinics now being sponsored by the Parent-Teacher groups. In sponsoring these diphtheria immunization clinics, the private physician will be deprived of a certain number of vaccination fees; but, even here, if he will urge prompt vaccination of the baby at 6 or 8 months of age, there will be few pay patients left for the periodic health department clinic. At any rate, it has been our experience that the average physician is always ready to make a personal sacrifice for the welfare of his community.

ENCEPHALOGRAPHY probably should be considered the fifth most important diagnostic procedure available to the neuropsychiatrist, the first four being history taking, observation of the patient, neurologic examination and spinal puncture.—D. H. Echols.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

PREGNANCY

THE PREVENTION OF TOXEMIA IN

MOST of those who deplore and condemn the "unnecessary" loss of life attendant on the bearing of children offer nothing more helpful than that woman should be under the care of specialists in obstetrics throughout pregnancy, and delivered in a lying in hospital.

This Department Editor has just run across an article written in an entirely different spirit, by a doctor having the saving grace of common sense, which causes him to realize that what may (or may not) be desirable must be balanced against what is attainable. Read what he has to say. Although he has the temerity to say that simple measures are often better than complicated, to speak and practice *against* putting "the expectant family" to unnecessary expense and to go in many ways against the orthodox—even to saying there's no need for a pregnant woman to drink milk unless she wants to—apparently his results are just as good as those of the specialists who practice under what they regard as "ideal," and what are certainly very expensive, conditions.

Here's the gist of what he has to say:

Over a period of ten years, out of 8,307 deliveries we have had only eight cases of eclampsia. Three of these cases had never been seen previous to their entrance into the hospital and all eight of them recovered. The most accepted opinion is that eclampsia is due to some poison maternal or fetal in origin, or both.

We know of no other animal that starts vomiting when it is pregnant, but we see eclampsia near term and postpartum among our domestic animals.

Today too many of our women are well versed in contraception and too few have knowledge of reproduction sufficient to coöperate well with their obstetrician. A girl's school teaches our girls the same subjects taught our boys. The young man comes to his responsibilities well prepared but some of our coeds come to theirs so frightened they can do little or nothing but vomit. On the other hand, their knowledge of contraception is complete at a rather early age. The birth rate in this country decreased 33 per cent between 1915 and 1936. Primiparae comprise 30 per cent of all labor cases, but toxemia is nine times as frequent in primiparae as in multiparae.

J. C. E. Galloway, Evanston, Ill., in *Jour. Kansas Med. Soc.* Feb.

In order to obtain coöperation one should quote a flat fee for entire care instead of separate fees for each visit. One does not need a large scientific laboratory to practice good obstetrics. Blood chemistry studies are of very little practical value. To outline the care of the pregnant woman and name the five instruments of attack which we have at our command and should use:

1. A general physical examination and an attempt to cure all physical disease.
2. A scale.
3. A blood pressure apparatus.
4. A test-tube and burner.
5. A knowledge of food.

Infected tonsils and teeth should be removed early in pregnancy. I require x-ray examination of all the patient's teeth shortly after her first visit; 15 per cent of my patients have abscessed teeth in spite of good dental care. An increased b. m. r. to plus 20 may be looked upon as normal; but if, as pregnancy advances, the rate remains low, the patient should be given thyroid extract sufficient to correct. Epsom salts should be used as often as every two or three days in some cases but not for long. In order to increase the urinary output daily doses of ammonium nitrate may be used—six to 10 grains. As a rule, the intake of fluids should be less than output if edema is present, considering from 10 to 30 per cent of ingested fluids lost by way of the lungs and skin, depending on temperature and humidity. Every toxic patient should be at rest, depending upon severity, from 12 to 24 hours a day. Sedatives should be used freely day and night. Mild toxemia may furnish us with a premature separation of the placenta or uterine apoplexy.

Most of the cases of toxemia are in women who gain too rapidly and too much. The individual should not weigh more than 20 pounds over her normal weight at delivery which means an average gain of one-half pound a week if she is normal to start with, or it may mean that she must lose weight throughout her pregnancy. This loss of weight will not affect the baby providing diet is balanced and contains the necessary vitamins and minerals. One having marked increase in weight should be given 1200 calories a day and epsom salts twice a week and little sodium chloride. Excess weight without edema may not be dangerous but sudden edema warns of convulsions, pulmonary edema, cyanosis and heart failure.

If the b. p. rises above 130 and increases each visit the patient must be regarded as developing toxemia and must be examined more frequently. On the other hand if she maintains a b. p. above normal and it does not increase and there are no

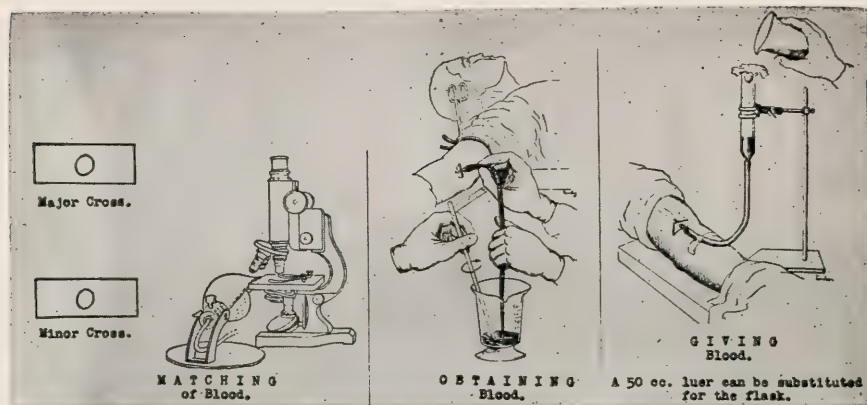
other signs of toxemia she may be treated as essential hypertension and not toxic. One woman twice delivered by the author had systolic pressure pressure, every reading between 170 and 180. Toxemia causes a rise in b. p. before it causes albumin to pass into the urine. If the b. p. rises to 170 the patient is in grave danger and if it is allowed to remain at that level for any length of time she is apt to develop chronic nephritis regardless of convulsions.

There is no need to do elaborate tests on urine and blood. The heat and acetic acid test for albumin is all right, and single specimens of urine will furnish the evidence one wants. Microscopic examination of urine should be done; in severe cases always look for acetone and diacetic acid. One may be inclined to become careless after testing many hundreds of specimens for sugar, because very few diabetic women conceive. However, one should test for sugar, because if at about the fifth or sixth month one finds a positive test for sugar, that individual may be the one who will later furnish a case of pre-eclamptic toxemia.

Blood chemistry is of very little value in helping us to decide to keep or terminate the pregnancy. One can make as good a decision without it as with it and in some cases a better decision is based alone on physical findings, blood pressure and urine analysis. The only reliable blood chemistry is the uric acid determination and we should not burden the patient with unnecessary expense nor should we burden the laboratory with unnecessary procedures.

Most pregnant women eat too much. Only a few must eat more than they are accustomed to. Most of my patients get along very well on 1500 calories a day, a few on 1200. They are asked to allow themselves only one-half pound gain a week. If they were overweight they must lose or stay the same until their weight is what may be called normal for that period of gestation. The patient should weigh herself at least every other day. The ingestion of salt should be kept at a minimum. If she shows signs of toxemia she should use no salt at all. Sodium bromide and bicarbonate should be left off. If salt is restricted for any length of time give $2\frac{1}{2}$ grams of potassium chloride a day in order to maintain a proper chloride balance. Excretion of sodium chloride is impaired during pregnancy but here again one can determine the NaCl in the urine in one's office laboratory. It should run two to three grams per day or less.

If toxemia develops administer glucose—just as effective at home as in the hospital. Glucose by mouth is more effective in most cases than by vein or subcutaneous injection because it goes directly



This simple equipment is all that is needed for transfusion

to the liver through the portal circulation. Long before severe symptoms develop the patient is told to buy Dextrose or Dyno and to measure out eight level tablespoons each morning and to see to it that that amount is consumed by night. She may use it in place of sugar or eat it as such.

As for protein, advise its reduction only in cases where liver involvement predominates and not where there is marked edema and albuminuria. Quantitative albumin tests are easily done in one's office. If the patient shows as much as ten grams of albumin she should be given as much as 150 grams of protein a day.

The average pregnant woman requires a general diet of about 70 grams of protein, 18 grams of fat and 350 grams of carbohydrate—1800 calories; but she may need much less if she is overweight or signs of toxemia have developed. The general diet should be maintained including proteins until some definite indication for a decrease in protein is shown—hypertension, little or not albumin, reduction in urine, no edema, with headache and epigastric pain. Many patients with edema, albuminuria and moderate hypertension have been made worse by "no meat or other proteins." Some patients should have their proteins reduced in the last six weeks of pregnancy if there is retention of nitrogen, but it should not be denied entirely.

The average pregnant woman does not need to drink any milk unless she likes it and can digest it easily. About 20 per cent of all adults should not drink milk. About 125 foods were recently tested in a leading clinic as to distress after eating; 500 patients were questioned and the three foods ranking highest as the cause of gastric distress were

onions, cabbage and milk. A well-balanced diet with sufficient variety will meet all needs. If after careful study it seems advisable to furnish the patient with additional calcium, iron or vitamins they may be administered in whatever form seems best. The routine use of these additional dietary elements is not good medical practice and may constitute a considerable increase in the financial burden placed upon the expectant family.

Just when a pregnancy should be terminated in order to avoid risking the mother's life or to avoid some permanent impairment to her health, such as chronic nephritis, requires long experience and good judgment. Consultation with someone equal or superior to the physician in charge should always be sought before attempting to empty the uterus if the toxemia becomes severe. Certainly we have no right to risk the mother's life unless she, with full knowledge of her condition, insists upon it. She may and does in many cases carry her next baby to term without becoming toxic.

THE BENZYL BENZOATE TREATMENT OF SCABIES

(R. E. King, *British Med. J.*, Nov. 9th, 1940)

The writer recommends the benzyl benzoate method as safe, reliable and rapid.

The lotion consists of equal parts of benzyl benzoate, industrial spirit, and soft soap; amount for complete treatment of one case is 1½ ounces.

Anoint the body with soft soap, rubbing it with special areas. Allow the lotion, and the lather produced, to dry axillae, wrists, and between the fingers. Soak for 10 minutes in a bath at 100°, the patient rubbing the affected areas thoroughly during this time. While the body is still wet apply the lotion for five minutes by means of a pig-bristle shaving brush, very thoroughly, and all parts must receive attention, particular care being paid to the infected

areas. Allow the lotion. and the lather produced, to dry on the skin, and again apply the lotion vigorously for a further five minutes, then dry the body with a towel.

Resume clothes worn before treatment; 24 hours later a bath is taken and clean clothes put on. The discarded underclothing and the bedclothes used by the patient are sterilized by boiling. Close contacts of the patient should be treated on the same day, even though they show no sign of the disease.

Those portions of the skin showing severe pyogenic infection should be treated as energetically as the unabraded areas.

The patient is ambulant throughout, and is subjected to a minimum of inconvenience and discomfort, no matter how severe the infection. The sarcopticidal action of benzyl benzoate is immediate and reliable, and no post-therapeutic irritation of the skin results. Pyodermitis due to infected scabies can be thoroughly treated and rapidly cured. *The whole treatment is completed in 30 minutes, at small cost.*

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

CASE-FINDING IN TUBERCULOSIS

CASE-FINDING in tuberculosis is well recognized as the basic principle in tuberculosis control. Since the discovery of the tubercle bacillus by Robert Koch the disease has been known as an infectious and transmissible disease, but in spite of the continuous efforts to stimulate earlier diagnosis of the disease at least 75 per cent of the cases now entering sanatoria over the country are in an advanced stage. Furthermore, statistics indicate that 20 per cent of sanatorium discharges are by death and that at least 50 per cent of those discharged alive do not survive as long as five years without a reactivation of their disease. In fact, the greater proportion of deaths among discharged sanatorium patients occurs in the first three years following discharge, and the most of those who maintain their disease in an arrested or quiescent state for periods longer than three years are handicapped in earning a reasonably adequate livelihood.

Such facts indicate that, although the facilities for treatment and the methods of treatment have been greatly extended and improved in the past few years, the sanatorium death rate remains approximately what it has been for a good many years. It is also true that the institutional and treatment phases of the disease have required the expenditure of the larger part of the funds provided for the fight against tuberculosis, some part of which funds might have been used to finance more thorough methods of case-finding. The location and proper care of the infectious tuberculosis case is still the basis of a control program. Whether or not the modern methods of treatment, notably

collapse therapy, have reduced the ultimate death rate of institutional cases, such procedures have been of inestimable value in rendering many patients non-infectious and therefore not a danger to their contacts. Hence the number of possible future active cases of the disease is thereby appreciably reduced.

The greatest handicap to the general practitioner of medicine in the recognition of early cases of tuberculous disease is the fact that primary infections by the tubercle bacillus are, as a rule, symptomless. Such patients are not sick, and therefore do not seek medical advice until their disease process is fairly well advanced. Hence, if the disease is to be discovered in its early stage in any number of instances, examinations must be made of the apparently healthy population of the community. The routine tuberculin skin-testing of school children, which has been carried on rather generally for several years, has been a step in this direction, although this does not comprise a complete program. Pulmonary tuberculosis of the infectious type is rare in children between the ages of five and 15 years, but positive reactions in children of these ages indicate the presence of sources of infection with which such children are, or have been, in contact. The percentage of positive reactors among Negro school children is from two to five times as high as among whites, the rate of incidence depending apparently on varying economic and environmental conditions. Tuberculosis and poverty go hand in hand and general improvement in living conditions in any section has its effect in the reduction of tuberculous infection. Because of more congested living conditions and possibly lower physical resistance to infection, advanced pulmonary disease is likely to be found more frequently among early teen-age Negro children than among whites of similar age periods.

A program of mass examination of the apparently healthy adults in any community is a rather large and expensive order, but it has been attempted in sections of the larger cities with extremely encouraging results. In figures from surveys noted by H. R. Edwards of New York City in a recent article in *Diseases of the Chest* the highest percentage of active disease was found among inmates of lodging houses (5.3%) and Riker's Island Penitentiary (4.5%). In this report it is noted that in 16,810 examinations among students in the colleges operated by the City of New York only 34 cases of active disease (0.2%) were found. This low incidence of disease is explained by the fact that 85 per cent of the enrollment were Jews, a race which has a well known resistance to tuberculous infection. Among en-

rollees of the National Youth Administration 8708 examinations were done, resulting in the recognition of 79 cases of tuberculosis, a percentage 0.8. Department of Health employees of the city showed 1.1 per cent.

A considerable amount of valuable work in case-finding has been accomplished in industrial plants and industrial construction work by medical supervision of the workers and preemployment examinations of prospective employees. This has been particularly noteworthy in the dusty trades, statistics indicating that the principal causes of death among silicotics is tuberculosis. Although lower among the better-paid industrial workers than it is among the low-wage unskilled laborers, or the relief workers, there will be found a sufficient number of cases of active disease among them to justify the effort required to find them.

Among these groups of workers, as a matter of economy, the tuberculin skin-test should be used as a screening process whereby the negative reactors may be eliminated from further examination. The positive skin-reaction in an adult is of very little value as an indication of active disease, but it does show that there has been at some time an infection by tubercle bacilli. The x-ray film is the most important method of diagnosing early tuberculosis and every positive skin-reactor should have the benefit of this diagnostic procedure if possible. Fluoroscopic examination is of considerable value in such cases if lack of funds is an item and fluoroscopic facilities are available. Much work is being done in the effort to originate a less expensive method of producing satisfactory x-ray films of the lungs.

Lack of the necessary hospital beds to care for infectious patients when found has been used as an argument against more intensive case-finding efforts, but such arguments are without point. The earlier the diagnosis is made the more easily and successfully can the disease be cared for in the home. Many early cases will recover without institutional treatment if the proper regimen is instituted immediately, and the patient is carefully checked at frequent intervals to avoid the possible dangers of an acute spread of the disease process. Although no institutional patient should be discharged until the sputum remains negative for a reasonable length of time, available hospital beds can take care of many more patients if patients under collapse therapy having a continuously negative sputum are permitted to leave the institution, their refills to be furnished by clinics or capable medical men. As a matter of fact, the effort to return the person with moderately advanced tuberculosis to lucrative employment is merely inciden-

tal in the eventual control of the disease. The prevention of the infection of possible contacts, and thereby the reduction of future cases of the disease, is the most important consideration.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

INTERSTITIAL KERATITIS IN YOUNG CHILDREN

THIS type of keratitis is exceptionally rare before the 6th and after the 20th year of life. The commonest cause is syphilis, especially hereditary syphilis; about 10 per cent of the cases are due to tuberculosis. Both causative agents may coexist in the same subject. The disease, though rarely so, is observed in acquired syphilis and may be so contracted, namely, from a nurse maid.

It has been supposed that the disease is never the first symptom of hereditary syphilis, but positive observations now contradict this view (Fuchs).

A report of three cases seen within the year is here appended. Two of them come within the earliest age limit and one is the youngest such patient I am able to find record of. Only one of these children presented other symptoms of hereditary syphilis prior to the development of keratitis. All were well developed and well nourished for age.

Case 1—White boy baby, aged 6 months, residing in nearby rural district, first and only child of young parents both of whom had syphilis. At 4 months of age developed inflammation of the left eyeball, followed a month later by similar involvement of the right. The left cornea presented a severe and advanced parenchymatous inflammation, the left likewise inflamed but less severely. The blood Wassermann and Kahn were four-plus. There was no other evidence of hereditary syphilis.

Case 2—Ginger-cake boy, aged 7, residing in this city, first and only child of a mulatto father and Negro mother. Both under treatment for syphilis at time of marriage. Had been treated for one month for "rheumatism," and for soreness of eyes which had developed one week prior to being seen by the writer. Due to involvement of both knee joints the child was unable to walk. There was no evidence of other symptoms of inherited syphilis. Both eyes presented an advanced parenchymatous keratitis, worse in the right. The blood Wassermann and Kahn were four-plus.

Case 3—White girl, aged 9, residing in a nearby town, oldest of two children, the other a boy aged 5. The father and mother of this patient denied

syphilis and showed no evidence of it. Two Wassermann tests on the father at the State Laboratory and one here were negative, two on the mother and one on the boy at the State Laboratory were negative. Three years ago a Negro cook was employed in the home who was found to have syphilis after having been in the home for a year. Two weeks prior to be seen by the writer this child had been treated for sore eyes which was at first thought to be in some way connected with the recent flu epidemic although the child had not had the disease. When first seen a well advanced parenchymatous keratitis was present in each eye, worse in the left. There was no other evidence of syphilis. The blood Wassermann and Kahn tests were four-plus.

Summary: These cases present several instructive features: (a) one subject is near the lower age limit for the development of keratitis of hereditary lues; (2) one developed keratitis from a like cause in the first few months of infancy and is the youngest such patient I am able to find record of; (c) one developed interstitial keratitis from acquired syphilis which is a rare finding for age; (d) in only one case was there any evidence of syphilis antedating the eye involvement; (e) a greater awareness of the probability of the presence of specific disease in household employees and a more frequent medical check-up to detect it is indicated especially among housemaids, nurses and cooks who come in more or less intimate contact with the children of the home.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

IT IS THEIR FAULT

It has often been said that ignorance of the law is no excuse but it is equally as disastrous to be ignorant of one's opportunity. Affliction with just such ignorance is very common. It is human nature to put the blame on somebody else when things go wrong, but that has very little to do with remedying the cause or preventing the disaster. The only aid worth seeking is knowledge.

The medical profession in all of its various ramifications and connections is sick and tired of hearing criticism about the charges made by hospitals. If an individual spends one night in the hospital he is prone to use the experience as an excuse for neglecting all of his bills for the next twelve months. This is particularly true if the second bill happens to be a doctor's, dentist's or nurse's bill. I know of no condition in life where the old saying, "prepare for a rainy day," is more

neglected than it is in the matter of preparing for sickness, although we all know that there comes to nearly every individual the rainy day of sickness.

Because people have been so negligent in preparing for sickness a small group of individuals, known as hospital folks, have prepared a new remedy. This remedy is in the form of a coöperative hospital insurance and in some cases the insurance has already extended into the medical service. Therefore there is no reason why any person should be financially embarrassed because of a hospital bill except in the very rare instances where there is prolonged hospitalization. If people persist in neglecting to take out hospital insurance then it is their own fault if they find themselves unable to pay for needed hospital services. But placing the blame does not remedy the situation. What will remedy the situation is for one to make up his mind that he will profit by experience, for if he does not all of his dependents or employees may find themselves in an unfortunate condition. Therefore the hospital operators and superintendents as well as the employees can help prevent the lay public from neglecting hospital insurance.

How can this aid best be put into practice? If all of the employees of the hospitals in North Carolina would both preach and practice hospital insurance, within twelve months the citizenship of our State would no doubt respond tremendously. It goes without saying that any form of insurance the day it is needed is a god-send and no one will complain of the cost. Fortunate indeed it is that hospital insurance is so inexpensive that no one has any excuse to complain when he is paying the premiums. It may be obtained at a rate of from 60c to \$1.00 a month and this is within the financial grasp of everyone. In conclusion, therefore, it would be well for both patient and doctor to consider this opportunity for their mutual benefit.

DENTISTRY

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

FORENSIC ASPECTS OF THE TEETH AND JAWS

For persons dead and mutilated beyond recognition by ordinary means to be identified by dental restoration is not an uncommon happening.

The head of a British Dental Board writes on forensic dentistry from a different angle.

Certain diseases may accelerate or delay the eruption of teeth. Very rarely one or more deciduous teeth may be erupted at birth. Hypoplasia of

1. Evelyn Sprawson, in *Proc. Royal Soc. of Med.*, Lond., 1940.

the deciduous teeth is usually evidence of deficiencies in the maternal diet, and the evidence disappears with the deciduous teeth. In the permanent teeth there is evidence which may persist throughout life. The transverse linear hypoplasia mostly seen on the incisor teeth is evidence of an acute short illness at the time the parts of the teeth affected were forming, but its absence is no evidence to the contrary.

The efforts put forth in suckling tend to widen the jaws and so make room for regular alignment of the teeth. There are some who do not altogether agree with this. I look on the hand-feeding of children as providing a large proportion of the orthodontist's work.

The special form of attrition shown on the maxillary incisor teeth of boot-lasters is well known, so also is that form of abrasion shown by the clay pipe smoker; I have several times been assured by patients showing a well-marked pipe notch that they have only smoked pipes having vulcanite stems, but I am not convinced that vulcanite can cause this notch. Small jagged notches occasionally seen on the maxillary incisor teeth of women are caused by biting ends of cotton.

"Erosion" cavities tell us that the patient takes some care of the teeth, that they scrub too hard or use too stiff a brush or too abrasive a dentifrice, that they use their toothbrush in the wrong manner; and they may also indicate whether the individual is right- or lefthanded.

The form of anterior open bite shown by the thumb or finger sucker is good evidence, especially in childhood.

The rampant caries of the baker or confectioner is also of value. I once saw a professional chocolate taster who had cervical caries on every tooth in an otherwise almost complete dentition. Extensive cervical caries has also been noted in young employees at chemical factories who had to do with the manufacture of sulphuric and tartaric acids. A patient in the habit of sucking lemons had dissolved most of the enamel off the labial aspects of the teeth.

The smoker will have such salivary calculus as is on his teeth stained dark brown, notably lingual to the mandibular incisor teeth, and the drinker of strong tea will often have it, or his dentures, stained black.

The gingival blue line of chronic lead poisoning is not present when there are no teeth and is dependent on some degree of gingival infection. A bismuth deposit, as when this drug is used in antisyphilitic treatment, is usually browner than that caused by lead.

People who use soot as a dentifrice also show it

in their gums, sometimes as a line following the gingival contour and sometimes as a deposit tattooed into the actual gum tissue by the toothbrush bristles.

Tribal marks are made in some primitive races by the filing away of portions usually of the maxillary incisor teeth and occasionally the removal of one or more anterior teeth; though in the Australian aboriginal the removal of one or two maxillary incisor teeth, when practiced, is not of this nature but apparently part of the initiatory ceremonies at puberty.

In other countries the stained teeth of the betel chewer may also be evidence of value.

The degree of attrition seen on the permanent teeth gives some indication of the habits, especially masticatory habits, of the individual. It is the duty of the Escouimaux women to soften the seal skins used for clothing and this they do by masticating them.

Absence of dental caries in childhood or young adult life may indicate some degree of dietetic perfection rather than conservative care.

Chronic anterior gingivitis, especially in the young, is almost pathognomonic of mouth-breathing occasioned by nasal obstruction.

The character and type of conservative work, if present, will indicate many things, including at present, social status and even perhaps nationality. The dentistry of necessity and the dentistry of luxury are of different types.

DENTAL CARIES IN HIGH SCHOOL CHILDREN

No longer do we tell parents that a clean tooth will not decay. Proper attention to tooth cleanliness will and does lessen the incidence of decay, how much we would not undertake to estimate.

In the vast majority of cases tooth repair and restoration are required.

A recent study¹ brings out facts worthy of attention.

The data given are derived from dental examinations of 1,841 children attending the high schools of Hagerstown, Md., and of nearby communities by a dental officer of the United States Public Health Service. The analysis was designed to provide information on the prevalence of caries, dental care in the form of fillings, carious defects without evidence of fillings, and dental defects which had terminated in complete tooth destruction.

Analysis of the data indicates that:

1. The incidence of new cavities is 0.6 affected permanent teeth and 2.0 affected permanent tooth surfaces per high school child per year.

1. H. Klein, D. D. S., and C. E. Palmer, M. D., Bethesda, Md., in *U. S. P. H. Reports*, July,

2. The incidence of dental care in the form of fillings is 0.4 permanent tooth surfaces per high school child per year.

3. The average disparity, over the high school interval, between the rates of incidence of caries and provision of care by fillings is shown to account for an average of 1 1-3rd permanent teeth extracted or with remaining roots per high school child.

4. The average disparity between the annual rate of development of caries and the annual rate of placement of fillings may measure the adequacy of dental care received by population groups.

Each year brings a new increment of untreated cavities. The average person on reaching adult age presents a reparative problem complex. Small initial lesions may be cared for by simple fillings, if left untreated the destructive process continues, and more dental work is required to stop the process and restore complete usefulness. As the destruction goes on there is more and more chance that economic obstacles may become serious.

It is well to emphasize that most of the injurious effects of dental caries may be prevented by filling carious lesions early.

CARDIOLOGY

CLYDE M. GILMORE, M.D., *Editor*, Greensboro, N. C.

THE COMBINED USE OF OUABAIN AND DIGITALIS IN THE TREATMENT OF CONGESTIVE HEART FAILURE

ALL of us chafe under the slow action of digitalis in those cases in which it seems that life depends on prompt relief. Very welcome is the suggestion¹ that ouabain be given to hasten digitalis effect.

Digitalis requires 2 to 5 hours before any effect and must be repeated in smaller doses under careful supervision in order to produce complete and safe digitalization.

Ouabain intravenously exerts an "initial effect in from 5 to 20 minutes, and a maximum effect in from 15 to 50 minutes." It is eliminated quickly.

Patients were selected whose heart disease could be classified, who had congestive heart failure, and no recent myocardial infarction and no digitalis within the previous two weeks, who were cooperative and capable of taking medication by mouth.

The maximum effect of treatment other than digitalis was ascertained whenever possible. Then 0.5 mg. (5 cat units) of ouabain was given intravenously simultaneously with 6 or 8 cat units of digitalis leaf orally; the amount of the latter de-

pended on the estimated edema-free weight of the patient. No other digitalis was given for 24 hours. At the end of this time the patient was placed on a daily maintenance dose of one to two cat units of reliable digitalis leaf by mouth. Ouabain in solution undergoes deterioration. All patients were observed carefully for digitalis toxicity, changes in weight, blood pressure, and ventricular and pulse rates.

Digitalization was produced 60 times in 59 cases. Improvement was noted within 15 minutes in 30% of the 60 trials, within one hour in 60% and within two hours in 80%. Improvement occurred very rapidly in the majority of the cases. As a rule, this improvement, once established, was progressive, maximum effect at 24 hours.

Almost all of the rheumatic patients showed improvement within one hour. All patients with hypertension, uncomplicated by arteriosclerosis, were improved within two hours; with arteriosclerosis in only 70½ within the first 2 hours. Eighty-three per cent of the patients with auricular fibrillation were improved within one hour, whereas only 58% of those with normal sinus rhythm showed improvement in this period.

Eighteen per cent showed mild toxicity at the end of 24 hours.

Dose of digitalis for patients who weigh less than 125 pounds, 4 cat units (0.4 gm.); for those 125 to 175, 6 cat units; over 175 pounds, 8 cat units.

The use of ouabain brings about rapid improvement; the simultaneous administration of digitalis leaf maintains this improvement, decreases or abolishes the gap between the beginning of digitalization and the establishment of a maintenance dose; is more rapid than the usual method of digitalization; is no more likely to produce toxicity; applicable to patients with normal sinus rhythm, as well as those with auricular fibrillation; the technic of administration is relatively easy. Complicated calculations are not necessary to estimate the initial and subsequent doses for digitalis.

DISCUSSION ON INJURIES OF THE EAR

(*Proc. Royal Soc. of Med., Lond., Nov.*)

Some patients complained a week or a fortnight after the injury of great sensitiveness to slight sound. They were grossly disturbed by the footsteps of people walking in the ward. One out-patient complained that whereas he used to amuse himself by tinkling on the piano he was now unable to do so because of the intense irritation which was set up.—R. J. Cann.

Shrapnell's membrane was never ruptured by blasts. The damage was always to the tense membrane. Therefore if a man came and claimed that the condition of his ear was due to explosion, yet there was perforation of Shrapnell's membrane, then one could be quite certain that the claim was without basis.—Lionel Colledge

¹ R. C. Batterman, *et al*; New York in *Amer. Heart J.*, Oct.

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THE TRI-STATE MEETING AT
GREENSBORO

FROM dozens of those who participated in this meeting held last month have come expressions of opinion that it was the best of a long series of extra good meetings. The addresses were praised highly, but no more so than the excellent clinics given, some wholly and others partly, by our Greensboro members. And the essays came in for high praise. One of our veterans who participated in the formation of the association forty-three years ago said it was the best medical meeting he had ever attended.

The attentions of Dr. Gilmore and his committee were constant and showed foresight and discrimination. For these much appreciation.

The attendance was not quite what such a meeting should have commanded, but about what was anticipated from letters and telephone and telegraph messages that so many doctors were being kept at home by illness in their own persons, in their families or in a great many of their patients. A good Charlotte doctor telephoned that epidemics had kept him from every Tri-State meeting for ten years, and moved that the meeting time be changed. He said a change to mid-March would be a great improvement. A quiet canvas revealed a general opinion that a better meeting-time should be chosen. Every member is urged to think over this matter, taking into consideration the meeting-time of other medical bodies, particularly the State Societies of the two Carolinas and Virginia, then to write the secretary his choice of dates; including whether to have a two-day or a three-day meeting.

A dereliction for which we must make amends was the unfavorable placing of our exhibitors and their wares. All of us regret this and by way of amends will bear it in mind to show special consideration to the representatives of Hynson, Westcott and Dunning, Mead Johnson and Company, Lederle Laboratories, Eli Lilly and Company, Powers and Anderson, Valentine Company, Van Pelt and Brown, Winchester and Winchester-Rich Surgical Supply Company, and John Wyeth and Brother.

Comments on results of the election with photographs of the handsomest products are reserved for next month's issue.

GOUT NOT A RARE DISEASE

WE have come to regard gout as a rare condition, formerly very prevalent among port-drinking, beef-eating Englishmen, and fairly prevalent

among Bostonians of the like habit. In the past few years a good many articles have appeared suggesting that we still have gout with us in considerable quantity.

An article in the current issue of a western journal rather convincingly presents the case for gout as a condition to be considered in arriving at a decision as to the nature of any case of joint disease.

This article tells us that the cause of gout is unknown, its incidence is probably as high as it ever was, though it affects chiefly men past 40 and may attack girls under 10, the deforming stage with tophi does not come for years. The familial tendency is considerable and may be helpful in diagnosis. The greater number of men among its victims is attributed, not to the over-eating and over-drinking of men, but to gout being of a sex-linked character.

The periodicity of early mild attacks leaving no disability, and later joint changes with urate deposits producing mechanical interference are outlined. The acute attacks may involve almost any joint, which by its red, hot, swollen appearance suggest a septic process, even a cellulitis. Attacks have been brought on by a high-purin meal, by a dose of liver extract, by a spree, by trauma, by cold or damp. Confusion with acute rheumatic fever is said to be not uncommon.

Chronic, deforming joint changes are rather to be expected, and renal impairment, probably with urate calculi, is given as a common sequel.

The diagnosis in advanced cases should present no difficulties, once suspicion of gout is aroused. Early repeated attacks of joint pain with freedom from pain between attacks and an increase of uric acid in the blood serum or plasma fairly establish the diagnosis.

The condition can not be cured, in the sense of restored to the former state. It is quite amenable to cure in the original sense of being cared for. Bed rest, fluids in excess, purin-free diet, a bed cradle and anodynes—*aspirin*, *codeine*—or *morphine* even; and hot pads and soaks are to be ordered during the acute attack.

The most important drug for gout, now as a hundred years ago, is *colchicum*, the best preparation *colchidine*, in doses of 1/120 gr. every one or two hours until eight to twelve or more doses have been taken. Adequacy is indicated by nausea, colic or diarrhea. Enough should be given. Pain should disappear within 48 hours. Indications of saturation may be treated symptomatically, after discontinuing the *colchidine*. Occasionally it is necessary to repeat the doses. In such case an interval

of two or three days should be allowed.

This article should serve to cause us to keep in mind the likelihood of a patient's joint trouble—acute or chronic—being of gouty origin. It is unlikely that there is as much gout among us as among the Back Bay folks. It is very likely that there is a good deal more among us than is being discovered.

By an odd coincidence, the evening of the day this comment on gout was made, the editor happened to choose to read from the *Letters of Pliny the Younger*, and there to come across a letter to *Calestrius Tiro*, in which is lamented the death of a mutual friend, driven to suicide by the pains of gout.

Says this letter:

Corellius is dead, in his sixty-seventh year. In his thirty-third year he was seized with gout in his feet. This was hereditary. A life of sobriety and continence had enabled him to keep down the disease while he was still young. Latterly he suffered the most incredible agonies, for the gout was now not only in his feet, but spread over his whole body. . . . His malady increased. . . . He refused all sustenance. . . . and said to his physician who pressed him to take nourishment, "It is resolved".

And so we have evidence that in the First or early in the Second Century A. D., gout was recognized to be hereditary, it persisted despite plain living, it extended to many joints and parts beyond the feet, and its pains were so intolerable as to cause a strong man to starve himself to death.

A MODERN HEALTH PROGRAM

FROM the author¹ has come a reprint bearing this title, with request for opinion. On reading the details of the plan, the editor is impressed with the idea that the carrying out of such a plan would establish the foundation for a structure which would meet practically all the demands that are being made by the people. As to the demands being made by politicians—who knows?

The objective is to bring about improvement in the distribution of medical care without disturbing the personal relationship between patient and physician and without lowering the standards of medicine. It is with the aim of retaining and probably enlarging the present facilities for preventive and curative medicine, as well as for research, that the plan has been evolved. It requires no legislation, no compulsion, and no payments for time lost through sickness; only a ruling or ordinance by local authorities which would administer it with available or an increased personnel and, of course, with the full coöperation of the profession and the

1. Clinical Gout, by J. B. Talbott, Boston, in *Rocky Mt. Med. Jt. Mch.*

1. Wm. Thau, M.D., Boston, article in *Medical Times*, Feb.

public.

This plan comprises three essential features:

I. A single annual health report of every individual,

II. Public Health Education, and

III. Compensation for every physician and hospital for services rendered.

I. THE ANNUAL HEALTH REPORT

1. *The purpose of the report:* The annual health report for every individual, or at least for the greater number of individuals, is the most important feature of this plan. The other two features are designed to make this plan possible and effective.

In Massachusetts and no doubt² in most States, every motor vehicle is thoroughly inspected twice yearly, and a report of its condition is filed with the proper authority. Many drivers die of cardiac or other disease while operating their vehicles. Similar accidents occur during the performance of other duties. It ought to be regarded as fair that such drivers or other persons called upon to do strenuous physical and mental work be thoroughly examined once a year and their condition reported to proper authorities. And since any individual may at one time or another be called upon to perform such duties; and, since children and the aged are more likely to be affected by diseases, a single annual thorough examination recorded and filed appears a necessity.

2. *The reliability of the report:* The family physician is the most appropriate and the most reliable person to make the necessary examination and report. The simplest way to achieve prompt results in carrying out this plan is to begin with the school children from the kindergarten, and follow through the college years. Every child would be expected to bring such a health report from the family physician. This would enable the school physician to know better the health condition of each child under his supervision, and to carry out his duties as school hygienist. He could concentrate more on instructing the nurse, the teacher, the parent, and the pupil, while the family physician, to whom the child could be referred whenever necessary, would do all the work which is properly his. Those who have no family physician would, in accordance with the principle of this plan, be able to choose any practitioner for such an examination. During these examinations, the physician and specialist would have an excellent opportunity to show every parent and guardian the need for such an examination so that they also might take it. As to adults, similar arrangements could be made. Em-

ployees would be expected to bring a note from the family physician, stating that the annual examination has been made, and the report filed.

3. *The contents of the report:* The report should be based on a complete history, and on an examination to find physical defects, and to test the functioning of every organ. It should include records of tuberculosis tests, of all necessary immunizations (against smallpox, diphtheria, whooping cough, typhoid, undulant fever, etc.—depending on the patient's age and on the district), as well as results of analyses of urine, blood (Wassermann), sputum, and reports on examinations by any specialist such as the family doctor may deem useful in any certain case. The forms to be filled out would be furnished by the local authorities, who would receive a carbon copy of each report carrying the identification number of the record, but not the patient's name, which would appear only on the original copy remaining with examining and treating physician. On each report should be noted whether it is the first annual report of the patient, and if not, the record number of the last report, or the name of the physician who made such a report, so that trends of conditions and the health progress of individuals may be followed up and studied through the compiled annual reports over a long period, or even of a whole life record. Finally, the report should contain the recommendations made by the physician, who would assume full responsibility for treatment and correction of any defect. In the case of a school child, the physician would only transmit to the school physician a note stating that he had made the annual examination and report, and whether the given child may participate in all or only in some of the school activities, or whether he should be taught in special classes, or be exempt from certain duties. In the case of adults, the employer, or plant physician, would be informed that such a report has been filed, and whether or not the individual person may do certain work.

4. *The nature and value of the report:* The annual reports would be strictly confidential. The carbon copies of the original records would contain only the record number and name of the examining physician, but not that of the patient. Access to such records would be permitted only for the purpose of follow-up, or research activities. The local health authorities would keep such records on file and report annually the number of normal and abnormal conditions to the State authorities who would in turn forward the assembled data to the Federal health service where all the nation's statistics could be compiled and published.

5. *The adaptability of the report:* The plan for

2. Wherein Dr. Thau is greatly mistaken, but no harm is done his thesis.—*Editor*

such an individual annual examination and report could be adapted by any community. The problem of rural districts could be solved by increasing the existing facilities with the help of local, State, and national authorities, by making the living conditions for a physician more attractive, and also by the coöperation of medical schools which could establish rules that every graduate should spend one year in rural practice.

II. PUBLIC HEALTH EDUCATION

For any other health program the full coöperation of the profession and the public is necessary, and the best way to obtain it is through health education. While a platform, radio and lay or medical press campaign would be helpful if kept alive for some time through frequent reports of progress, it is chiefly the family physician, who, being more than anybody else in touch with and able to influence the patient, is in the best position to assure good results for this or any other health program.

III. COMPENSATION

It seems certain that this would be very far less expensive than any other plan, because most people would see their private physician and pay for his services. Those unable to pay for private consultations might be allowed to choose their physicians and specialists (either in their offices, or in the hospitals), who could be compensated by the authorities on a per capita, or part-time, or full-time basis according to a pre-arranged schedule. It is only just that the physician who has always given freely of his time and services for charitable purposes should receive adequate compensation for his work. This expense would be small, indeed, if compared with the benefits it would assure.

This program contains no provision for payments for time lost during sickness, or disability for any cause. Such payments may be assured by small salary deductions for a health or accident insurance. If put into operation and well administered, the above program would have the following advantages:

1. Medical care would be extended to people in cities and towns who, because of ignorance or lack of facilities, never before asked for or received it.
2. Many physical defects in both paying and non-paying patients could be discovered and corrected, and thus public health greatly improved.
3. Tuberculosis testing, and immunizations against any disease, could be efficiently carried out everywhere.
4. The problem created by deficient vital statistics would be solved.
5. The income of every practicing physician

would be bound to increase.

6. There would be no plethora of physicians.

7. After a few years' operation of such a program the health of the people would be improved and curative medicine would gradually give way to preventive measures and health education.

8. Through health and safety education health consciousness could be so aroused as to bring about a reduction of accidents in industries, in homes, and on the highways.

9. The choice of physicians would remain free, and the personal relationship between patient and physician unimpaired. Far from thwarting initiative and progress, research would be fostered and encouraged.

10. It would always be possible to know the state of the nation's health, to study its progress, to concentrate on improvements whenever and wherever necessary, and to have an exact idea of the available man material in a given emergency.

The putting into operation of such a program would certainly go far toward doing justice to the family doctor, would solve most of our immunization problems, would curb harmful activities of school and other public nurses, would reduce the cost of health care and much improve the distribution of money paid out on health.

That it would do as much as its proponent thinks it would, we do not believe. But no man is a competent judge of his own dog, his own horse, or his own idea.

THE CURATIVE VALUE OF CRYING

In this era of "Polly-Anna-ism," of over-done and often entirely spurious "optimism," it is well to call attention to the fact that it is as physiologic as healthful, to cry when one feels like crying as it is to laugh when one feels like laughing. It is well to go further and inform the shallow-pated chanters of "smile, smile, smile," that tears have a time and a place in the scheme of things, and that's what a wise doctor¹ uses a few pages of a valued exchange in doing.

A certain amount of stoicism generally is considered to be a wholesome quality in any human being; but one must seriously question that type of stoicism which is exhibited where there is no real need. Self-mortification at times can lead only to varying degrees of suicide.

There are many psychological situations that will bring on crying. As a rule, it is considered a weakness to cry. In some it seems almost an impossibility, and it is in just these cases that a spell of crying would do most good.

¹ A. N. Foxe, New York, in *Med. Rec.*, Mar. 5th

Crying with a person binds one to that person. Crying over the loss of a person or separation from a person helps one to separate himself even more from that person. Those who do not cry at a funeral where they are expected to cry are considered to have had no love for the one who died. The full acceptance of death of a loved person without crying is that refusal to accept the fact of death which leads to many attempts to communicate with the dead.

A child that cries by itself achieves a great degree of independence from personal attachment to others. Many mothers carry this out under considerable emotional stress and wish to go to the infant.

The mother who lets the infant cry it out makes it a lot easier for herself, but one wonders if the mother who prolongs this kind of weaning over a number of years does not in the long run accomplish more for her child. As you will see, these are not easy problems and perhaps the solution lies in neither extreme.

There are some patients who have cried so long and hard as to have cried themselves out. Often they are cold and phlegmatic, though highly sensitive and deeply unhappy persons. There are some who have never known what it is to cry. They are also sensitive and expect a great deal to be done for them. Then there are all grades in between, including those whose problems date from situations partly the result of infantile training and partly the result of real and unavoidable situations. Crying in itself may reach a degree that is in itself harmful, rather than therapeutic.

In no two patients are the situations alike and in no one patient is the situation the same at all times. It is a problem in both men and women. In women the time of menstrual flow is often the period of fearful outbursts.

The significance of crying is so momentous that one wonders how it is that some form of tear gas has not yet achieved any vogue.

BY WAY OF AMENDS

For our February issue the Department of Obstetrics supplied the substance of an instructive article by Dr. E. D. Colvin, of Atlanta, which article appeared in September 1940 issue of the *Journal of the Medical Association of Alabama*. A proper credit line was set, which was lost in make-up. Reference was made to a subtended credit line, which would make it obvious that credit had been given. However we wish to give credit specifically to Dr. Colvin and the Alabama Journal.

OLD AGE—Barker (From Page 134)

have been safely carried out in persons over 70. One woman 106 years old was successfully operated upon recently for strangulated hernia and, in 1939, a 110-year-old colored man underwent prostatectomy and was alive and well a year later.

The problems of mental hygiene in old persons have recently (1939) been well discussed by George Lawton. In my little book, *Psychotherapy*, published last year, I have emphasized the details of mental hygiene during senescence—lessening of hours of work, increased amount of rest and recreation, regular gentle exercise, avoidance of fatigue, gradual delegation of responsibility to associates, and cultivation of social, altruistic or literary interests as business interests are diminished.

PESSIMISTIC AND OPTIMISTIC VIEWS OF OLD AGE

Medical and lay writers have differed much in their estimation of the desirability of old age. Many, following the example of the author of Ecclesiastes, expressed gloomy views; others have emphasized the brighter side. In pathological old age, the debit side greatly exceeds, without doubt, the credit side; but as to physiological old age some are more pessimistic, others more optimistic. You will recall that Anthony Trollope, in his novel *The Fixed Period*, suggested the desirability of putting persons painlessly to death when they approached the age of 70. The political economist and humorist, Stephen Leacock, wrote me recently "about the only good thing you can say about old age is that it is better than being dead." However, in an article entitled "This Business of Growing Old" published in the *New York Times* just after his 70th birthday, he said "the old person has some consolation if he has something to pass on—the new life of children and of grandchildren, or, if not that, at least some recollection of good deeds or of something done that may give one the hope to say *non omnis moria*"—I shall not altogether die.

The late Sir William Osler, at the age of 56, when under the emotional strain of saying goodbye to his friends in America, seemed rather pessimistic when he spoke of the relative uselessness of persons over 60. He lived, however, to be over 70 himself and exerted a profound influence in later years upon medicine and upon the general welfare.

The late Dr. A. S. Warthin of Ann Arbor thought that old age should be met with courage. He emphasized the many compensations of the 7th and 8th decades of life derived from the fact that spiritual and mental functions are prolonged

longer than other functions. He counted the old person fortunate, however, if he were blessed with a speedy release before the unhappy days of second childhood came upon him.

The athlete and sculptor, R. Tait McKenzie, looked upon old age favorably for its gain in physical and mental poise, for its accumulated experience in skills, for its knowledge of ways of saving mental and physical energy, and for the satisfaction of doing well and easily things that younger men have to struggle over unsuccessfully. He valued his contacts with fine minds and personalities as well as his better understanding of fine literature. With Audrey Brown he said: "I shall grow old with autumn and not reluctantly;" and he felt it to be his duty "to maintain his fortitude until the end."

PERSONAL EXPERIENCE WITH LONGEVITY

I myself have had the good fortune to have lived longer than the average man and, because of long-lived Canadian ancestors and a relatively favorable environment, have thus far escaped most of the infirmities and disabilities that all-too-often accompany longevity. I am reconciled to the fact that the duration of human life is definitely limited; but, I shall be glad to continue to live as long as I can be professionally and socially useful, hoping however that when usefulness is over, release may come painlessly, and all the better if suddenly, without my being required to linger on for a long time as a burden to myself or to others. I still have great pleasure in unravelling the tangled skeins of intricate and difficult medical diagnostic problems in hospitals and in private practice and in planning comprehensive therapeutic regimens suited to the management of multidimensional diagnostic findings.

As to ultimate philosophical considerations, I can truthfully say that I was more concerned with them in my youth than I have been during the approach to senescence. I am grateful for having been privileged to live during a marvellous period of medical and scientific advances. It has been a joy to watch, and to endeavor to participate in, the conquest of a large number of the infectious diseases and the extension of preventive sanitary measures; to witness the extraordinary progress of our knowledge of nutrition, metabolism and endocrinology during the 50 years that have elapsed since I graduated in medicine; to learn how to make use of the newer physical, chemical, biological and psychological technical methods; and to observe the beneficial effects of penetrating the bodies of sick human beings with the magic bullets of salvarsan, sulfanilamide and sulfapyridine.

Within a few hours, my chauffeur can bring me

from the medical libraries of the city fifty books or articles in English, French and German bearing upon any topic in which I am interested. The telephone, electric lighting, the automobile, the aeroplane, the x-ray, radium, the moving picture, the radio, electrical refrigeration in homes, air conditioning, synthetic textiles, and television are all developments of the period through which I have lived. On flying to Oklahoma City and back recently, it seemed almost incredible that I could reach Chicago in less than four hours after leaving Washington and that I could be in Oklahoma City in six and a half hours after leaving Chicago. I flew here from Baltimore yesterday in less than three hours. It continues to astound me that I can sit before my radio in the evening and within fifteen minutes hear short talks about war conditions from London, Berlin, Vichy and Athens.

I am daily thankful that it has been my lot to live in the United States of America rather than in a country that is under an iniquitous totalitarian government. I have greatly enjoyed reading *Gone With the Wind* and have been deeply moved by the persual of *Grapes of Wrath*, and a little later finding it possible to see and hear the characters of both books in cinematographic presentations. Among my pet diversions are solving the crossword puzzles in the London *Daily Times*, wrestling each week-end with Elizabeth Kingsley's double acrostic in the *Saturday Review of Literature*, and participating in an occasional game of contract bridge. Even to the Lucullan pleasures I am not wholly indifferent, for I enjoy a mild cigar after each meal, a glass or two of good wine at a dinner party, and the oysters, terrapin, soft-shelled crabs and fried chicken of Maryland! In addition to unusually happy marital and familial experiences, I have been blessed with loyal associates and a host of good friends and acquaintances who have added hugely to the joys of my life.

With R. Tait McKenzie I must admit that I have "had a good run" and that I should be willing to "call it a day." For my friends I can wish nothing better than that they may have as many happy memories as I have when they approach the sunset of their lives.

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GENERAL PRACTICE

WALTER J. LACKEY, M.D., Editor, Fallston, N. C.

THE PREVENTION AND CURE OF PUERPERAL SEPSIS

OUR maternal morbidity and mortality rates need to be reduced. Who of us can look back over our obstetric experience and feel that we have done all we could to get best results?

The gist of an article¹ from which all of us may profit, to the advantage of patients, our reputations and our ease of mind, is here presented.

The three major causes are trauma, blood loss and infection. The frequency (40%) with which streptococci are found in the nose and throat and

vagina of healthy women indicates that, for sepsis more is required than the presence of bacteria. A woman with streptococci in her genitals having an easy labor, without cervical or vaginal tear and no significant blood loss, is not likely to be invaded by these organisms; with an ill-chosen forceps delivery or injurious use of pituitrin, laceration and even moderate loss of blood, an overwhelming infection may result.

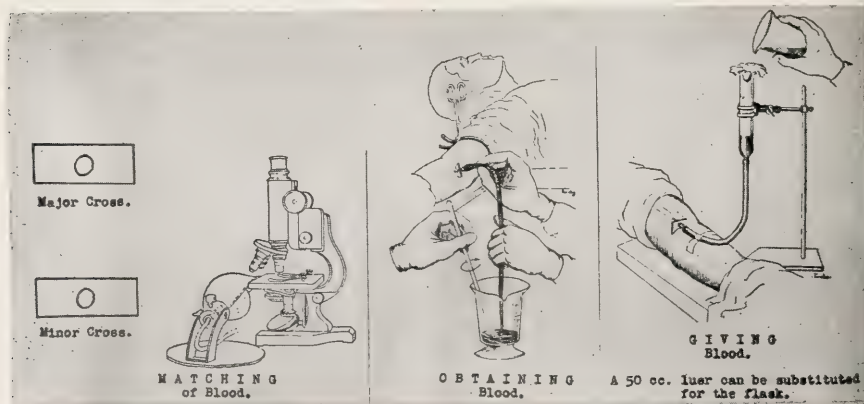
Antenatal care should bring woman to labor in the best physical condition.

There is evidence that 30 c.c. of 1% acriflavine in glycerine every 2-4 hours during labor will reduce the number of bacteria in the vagina. In a recently reported experience with 540 cases, 228 vaccinated with pooled culture, the morbidity was 5.4% as compared with 19.5% in the control group. All agree that transfusion, oxytocics and sulphanilamide are important as prophylactics.

Transfusion of either normal or immune blood is of value. Long and difficult labor is prone to infection because of the instrumentation, exhaustion and blood loss. The technique of blood transfusion is so well known that one hesitates to mention it, yet this day of specialization there is a tendency to make things appear complicated. One should never withhold a transfusion because of lack of facilities, for sufficient equipment can be obtained anywhere.

Darner gave 0.4 mgm. ergotrate (Lilly) orally t. i. d. routinely for 4 days to 150 alternate patients and studied its effect on morbidity as compared with the control series. The morbidity of the control group was 20% as compared with 6.8% for the ergotrate group. Fragments of placenta and membrane are expelled, and the uterus is kept free of blood clots which may serve as excellent

¹ W. E. Brown, Omaha, in *Nebr. Med. J.*, March.



This simple equipment is all that is needed for transfusion (Cut lent by *Nebr. Med. J.*)

culture medium for the growth of bacteria. In a series of 4,000 cases, sulphanilamide was given prophylactically to 2,264 with a morbidity of 6.6%; while in the control group it was 13.5%.

The treatment of puerperal infection, once it has developed, is chiefly an amplification of the prophylactic measures. Even though frank peritonitis is not present, one should carry out the Oschner schedule—semi-Fowler's position, nothing by mouth, parenteral fluids, sedation, heat to the abdomen, and if at all possible, isolation in a hospital. Wangenstein suction is recommended for the control of distention while catharsis and all forms of gastrointestinal stimulants are to be avoided. Transfusions should be given early and continued daily or every other day in 200-300 c.c. amounts; the first transfusion should be larger if blood replacement is a factor.

Divide sulphanilamide into 4 or 6 equal doses throughout the 24 hours.

About 90% of the patients receiving sulphanilamide will show some evidence of toxicity. In only 14% of the cases did symptoms require stopping the drug. The milder anemias can often be controlled by daily transfusions. The development of toxic symptoms does not necessarily call for stopping the drug, but for more careful supervision. Since these products are so readily soluble in water and rapidly excreted in the urine, the best antidote for toxicity is water.

For the 125-pound patient 4.5 gms. (grains 70) is given as an initial dose to saturate the patient and this is followed by gm. 1 (grains 15) every 4 hours as a maintenance schedule. In the average patient this will produce a blood level above 8 mgm. per cent in 24-48 hours. These schedules occasionally fail due to unpredictable factors, and unless blood levels can be checked, a few patients will be inadequately treated.

Fever may be one of the toxic manifestations of these drugs, so that one will frequently have to rely on blood levels.

Fortunately sulphanilamide and sulphapyridine may be given intravenously while neoprontosil can be given either intravenously or intramuscularly. The rectal dose is twice the average oral dose, gives satisfactory results. The material is suspended in a soda bicarbonate solution and instilled into the rectum every 4-6 hours.

One should examine a patient with an acute pelvic infection frequently to ascertain the development of a localized collection of pus in the pelvis or metastatic abscesses; drain through the culdesac of Douglas. The treatment of chronic pelvic inflammatory processes should include rest, the various forms of heat therapy, foreign protein and, as

a last resort, surgery.

Immediately following delivery before infection has been made manifest transfusion, oxytocics and sulphanilamide should be used in all difficult labors where complications in the puerperium are anticipated.

The treatment of the septic patient should aim (a) to localize the infection by the Oschner regimen, (b) to combat the sepsis by supportive measures, transfusions and sulphanilamide, and (c) to treat any complications by the usual medical or surgical means indicated.

COBRA VENOM FOR RELIEF OF PAIN IN HERPES ZOSTER

(M. M. McDowell, Danville, Ill., in *Med. Rec.*, Mar. 5th.)

There are few physicians who will not testify to the intense suffering that some of these patients endure, especially when the lesions are located on the head. Herpes zoster is a self-limited disease and rarely recurs. Two and five-tenths mouse units of cobra venom (Hynson, Westcott and Dunning) were given intramuscularly to one and the next morning she reported that she had slept well the entire night and was almost free of pain. Five mouse units (1 c.c.) were given daily for four days with complete relief and five more injections given daily sufficed to cure. In another cobra venom (2.5 mouse units) gave relief of pain within 24 hours, five units were given every other day for four injections, then discontinued with no return of pain.

Relief of pain does not follow cobra venom therapy so promptly in cases of advanced carcinoma as it does in patients suffering from herpes zoster. The venom seems to have an almost specific action in relieving pain in these cases. There was no depression noticed in my cases. No reactions local or general.

Herpes zoster tends to run its course regardless of treatment, yet cobra venom relieved the pain entirely in the six severe cases in which it was used.

NOTED JELLIFFE LIBRARY ACQUIRED BY NEURO-PSYCHIATRIC INSTITUTE

Acquisition of a 15,000 volume medical library described by bibliophiles as the most complete of its kind in the world, has been announced by Dr. C. Charles Burlingame, Psychiatrist-in-Chief of the Neuro-Psychiatric Institute, of Hartford, Conn.

The library, representing a lifetime of collecting by Dr. Smith Ely Jelliffe, of New York, nationally known psychiatrist and editor of the *Journal of Nervous & Mental Diseases* and the *Psychoanalytic Review*, is to be transferred to the Institute "to assure a permanent home for it under conditions which would be of satisfying benefit to future generations of psychiatrists and neurologists," according to Dr. Jelliffe.

In addition to the 15,000 volumes it contains 25,000 reprints. The psychoanalytic section of the library is one of the best collections to be found anywhere.

Included in the collection are some rare historical works dating back to the 15th century as well as practically all important psychiatric monographs from the time of Pinel and Esquirol, pioneers in the enlightened treatment of the mentally ill, down to the present day. Reprints include contributions from practically every civilized country.

NEWS

UNIVERSITY'S POSTGRADUATE COURSE

A postgraduate course in medicine beginning on Wednesday, March 5th, continues each week through Wednesday, April 16th.

The course is arranged for and sold to the doctors by University Extension Division and the University Medical School, will consist of a dinner meeting at 7 o'clock and a lecture at 8 at the Hotel Cherry in Wilson each Wednesday for six weeks.

The Wilson program:

Dr. E. L. Eliason, University of Pennsylvania, March 5th; Dr. Alexis F. Hartman, Washington University, St. Louis, March 19th; Dr. J. E. Moore, Johns Hopkins University, March 26th; Dr. W. B. Porter, the Medical College of Virginia, Richmond, April 2nd; Dr. Baldwin Lucke and Dr. Francis Wood, both of the University of Pennsylvania, April 9th; and Dr. Edward A. Schumann, University of Pennsylvania, April 10th.

SOUTHEASTERN SURGICAL CONGRESS.—Among those contributing to the program at the Richmond meeting, March 10th-12th, were: Drs. W. Lowndes Peple, Richmond; Walter B. Martin, Norfolk; John M. Emmett, Clifton Forge (Va.); Parker C. Hardin, Monroe; Byrd Charles Willis, Rocky Mount (N. C.); Frank P. Coleman, Columbia (S. C.)

PSYCHIATRISTS TO NOMINATE DR. J. K. HALL
(Richmond *Times-Dispatch*, Feb. 27th)

Dr. James K. Hall, president of Westbrook Sanatorium, will be nominated for the office of president of the American Psychiatric Association when that body holds its ninety-seventh annual meeting in Richmond May 5th-9th, it was announced by Dr. Harvie DeJ. Coghill, a member of the nominating committee.

Dr. Hall's name will be the only one presented by the committee for the office of president. The selection of Dr. Hall was unanimous, Dr. Coghill said.

Other psychiatrists to be nominated will be the following:

Dr. Arthur H. Ruggles, of Rhode Island, for president-elect; Dr. Winfred Overholser, of Washington, for secretary-treasurer, and Dr. Chester Carlisle, of California, for auditor, three-year term.

Nominated for three-year terms as councillors will be Dr. G. H. Stevenson, of Canada; Dr. Roscoe W. Hall, of Washington; Dr. J. D. Reichard, of Kentucky, and Dr. Karl Menninger, of Topeka, Kan.

Members of the nominating committee are Dr. William C. Sandy, chairman; Dr. Coghill, Dr. Garland H. Pace, Dr. Theophile Raphael and Dr. Kenneth J. Tillotson.

Between 1,500 and 2,000 persons are expected here for the association meeting in May.

TWO VIRGINIA DOCTORS HONORED

Virginians who served with distinction as army medical officers have been honored in the naming of two new army general hospitals.

One is Stark General Hospital at Charleston, S. C., named for Colonel Alexander Newson Stark, while the other is Lawson General Hospital in Atlanta, named for Brevet Brigadier General Thomas Edwin Lawson.

Colonel Stark, born in Virginia in 1869, later became a Colonel in the Medical Corps in 1917 and was awarded the Distinguished Service Medal for work as chief surgeon, First Army, A. E. F. He died in 1926.

General Lawson, born in 1793, began his career as a surgeon's mate in the navy in 1809. He later served as surgeon general of the army from 1836 to 1861, the year of his death. He received the rank of brevet brigadier general in 1845 for service in the Mexican War.

HEALTH DEPARTMENTS MERIT BOARD NAMED

Dr. Isaac M. Manning, of the University of North Carolina Medical school, will supervise merit examinations for employes of state and county health departments.

Dr. Manning will prepare and administer merit tests for about 200 health workers, including all in state or county departments concerned with expenditure of federal funds. He will be assisted by an advisory council composed of Dr. Thurman D. Kitchin, president of Wake Forest college, Dr. W. C. Davison, dean of Duke university medical school, and Dr. W. M. Piatt, Durham engineer.

The federal social security board has ruled that employes of the health boards, welfare boards and the unemployment compensation commission who participate in the expenditure of federal funds must take merit examinations.

UCC employes have taken their examinations and Dr. Frank T. Devyver, supervisor of the USS tests, has been picked to administer the welfare employe examinations.

WILSON'S TUBERCULOSIS HOSPITAL TO OPEN SOON

County Manager Walter H. Mercer has announced that the new \$40,000 Wilson County Tuberculosis Hospital, one of the most modern of its kind in the state, officially opens for patients April 1st.

The building is on the Wilson-Smithfield highway a few hundred yards south of the county home property.

RICHMOND ACADEMY OF MEDICINE.—On Feb. 18th at 8:30 p. m. at the Academy, the Medical Education Committee presented the fifth lecture in the Endocrine Symposium, given by Dr. E. C. Hamblen of the Duke University School of Medicine on Sterility and Pregnancy from an Endocrinological Standpoint.

Dr. E. W. PERKINS announces the opening of offices for the practice of Ophthalmology, Medical Arts Building, Richmond, Virginia.

Dr. REECE BERRYHILL, acting dean of the University of North Carolina Medical School, has been elected president of the Harvard Club of North Carolina.

Dr. JOHN W. WARREN has been elected county physician of Chowan.

MARRIED

Miss Elizabeth Scott, of Philadelphia, and Dr. George L. Carrington, of Burlington, were married March 1st in Woodland Presbyterian church, Philadelphia.

DEATHS

Dr. John Wyatt Davis, 65, died at his home at Lynchburg, February 28th, after an illness of six months' duration. A native of Richmond, Dr. Davis had practiced medicine in Lynchburg thirty-five years except for two periods when he was in the service of the United States Navy. Dr. Davis was popular, and, with a son, Dr. John Wyatt Davis, Jr., enjoyed a very extensive practice.



THE OLD ORDER CHANGETH

Sketch depicting one phase of medical practice in the middle of the nineteenth century. After a woodcut by A. R. Waud.

THE OLD ORDER does indeed yield place to new and more advanced ideas—in therapeutics as well as in other fields of human endeavor. Thirty years ago, when Pantopon was a newcomer—and a bold one, too, to challenge the position of morphine sulfate—it was greeted with a natural, healthy skepticism. But physicians in ever increasing numbers have been convinced of the superiority of Pantopon—have been convinced that some of the untoward by effects, so noticeable when morphine is used, are appreciably reduced by virtue of the pharmacologically balanced action of Pantopon.

Today there is hardly a hospital in the entire country in which Pantopon isn't frequently prescribed by leading members of the medical and surgical staffs. The usual dose: $\frac{1}{2}$ gr. Pantopon in place of $\frac{1}{4}$ gr. morphine sulfate.

HOFFMANN-LA ROCHE • INC.
ROCHE PARK • NUTLEY • NEW JERSEY

Use PANTOPON
IN PLACE OF MORPHINE

Dr. Francis C. Benson, 69, Hahnemann Hospital radiologist who is credited with being the first man in the United States to use radium in the treatment of cancer, died Feb. 18th. A member of the hospital staff since 1894, he was known for his research work in cancer and methods he had developed for treating the disease.

Dr. Thomas Bernard Latane, of Stevensville, Virginia, died in a hospital in Richmond on February 18th. He was born in 1872 and graduated in 1903 from the Medical Department of the University of the South, Sewanee, Tennessee.

BENZEDRINE SULPHATE IN THE TREATMENT OF NICOTINISM

M. M. Miller, Warrensville, Ohio, in *Med. Rec.*, Feb. 19th.

In the course of treatment with benzedrine of over 200 cases for alcoholism and various other indications most of those patients who were indulging rather heavily in tobacco suddenly acquired a distaste for tobacco in any form and consequently either stopped smoking or reduced their smoking considerably. The patients remarked that the tobacco had lost its taste and aroma—that it tasted like a weed.

The mild euphoria, along with a general feeling of increased well-being, seemed to diminish the need for seeking stimulation from tobacco. Neurotic patients seemed less susceptible to states of fear and depression.

I decided to test benzedrine as a cure for the tobacco habit.

Requirements were:

(1) Patients who showed a desire to stop or curtail their smoking for general reasons of health and economy.

(2) A medical contraindication for smoking.

Twenty-four patients were treated for periods varying from three to six months. Of these, 14 patients were in the first category, while 10 cases were in the latter. In addition, there were three control cases treated with placebo. Benzedrine sulphate was administered in doses of 10 mgms. after breakfast and after lunch—none after 1 p. m. because of the rather prolonged action of the drug.

Of the first group, six patients stopped smoking entirely. The remainder were able to reduce their smoking to relatively harmless proportions and admitted that smoking had ceased to be a pleasure. Of these six, four have been abstaining from tobacco for a period of more than six months thus far, and of the others two are still abstaining four months after medication.

In the second group of the 10 patients who began treatment, three are entirely abstinent after six months of treatment, and the rest for varying periods of three, four and five months, respectively. One patient has restricted his smoking to one or two cigarettes after each meal.

The controls treated with placebo showed no noticeable changes in their smoking, although for reasons of their general poor health it would have been advisable for them to stop or curtail their smoking.

The withdrawal from the nicotine, although abrupt, proceeded very pleasantly, with the patients experiencing agreeable euphoria which almost always follows the administration of the drug.

Of the 24, 19 showed increase in weight from 2 to 10 lbs. after 6 weeks of medication.

The drug should not be given on an empty stomach because of its rapid absorption in the blood stream under such conditions. It is a wise practice first to administer a test dose of 5 mgms. to determine the degree of excitation produced by the drug in each patient. Forbid patients under benzedrine therapy the consumption of stimulating beverages, even strong tea, coffee etc.

BOOKS



DIAGNOSIS AND TREATMENT OF ARTHRITIS AND ALLIED DISORDERS, by H. M. MARGOLIS, M. D., M. S. (in med.), F. A. C. P., Chief Arthritis Service, St. Margaret Memorial Hospital, Associate in Medicine, Montefiore Hospital, Consultant in Medicine, Pittsburgh Diagnostic Clinic; with 140 illustrations... *Paul B. Hoeber, Inc., Medical Book Dept., Harper & Brothers, 49 East 33rd St., New York City. 1941. \$7.50.*

The author believes that the general attitude toward arthritis is not as hopeful as it should be, so he writes a book to supply information which will encourage the general practitioner to undertake with confidence the management of such cases. Low-back pain and sciatica are dealt with in great detail, also the prevention of deformities. Focal infection is discussed in a very conservative manner. Anal cryptitis may be a cause of arthritis. As in tuberculosis, rest is given as the mainstay in treatment. Attention to nutrition and bowel management, blood transfusions and removal of foci prepare the way for "specific" measures. The author's experience with bee-venom and several other touted remedies has been disappointing. A warm, dry climate is beneficial. The various measures of physical therapy are reasonably evaluated.

The practitioner will here find a book in which various and diverse claims are evaluated on their records, in which there is hopefulness without Polly-Annaism.

THE YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY, edited by FRED WISE, M. D. *Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital, Columbia University; and MARION B. SULZBERGER, M. D., Assistant Clinical Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago.*

A long special article on psoriasis offers little that is new. The mycotic infections, occupational dermatoses, allergy, eczema and dermatitis are treated of in a practical way. Drug eruptions are recognizable if we look for them. Sulfonamide medication may be fatal in a case of lupus erythematosus. A vital connection between scleroderma and the thyroid is suggested.

A case of colored sweat and tears due to face powder is abstracted. Overzealous use of the toothbrush is credited with causing ulcers of the gums and tongue. Notice is taken of a case of generalized herpes zoster. Recent experiences with venereal diseases are narrated. Therapy in this field is brought up to date.

MANUAL OF CLINICAL CHEMISTRY, by MIRIAM REINER, M. Sc., Assistant Chemist to The Mount Sinai Hospital, New York; introduction by HARRY SOBOTKA, Ph.D., Chemist to The Mount Sinai Hospital, New York. With 18 illustrations. *Interscience Publishers, Inc.*, New York. 1941. \$3.00.

Biochemistry is a comparatively new term coined to cover the most intimate changes that go on constantly within the living body. This little book is made up of descriptions of means of investigating and interpreting the great number of these changes which we have learned have important health bearings. It may be taken as a conservative, reliable guide in this field.

MANUAL OF PHYSICAL DIAGNOSIS, With Special Consideration of the Heart and Lungs, by MAURICE LEWISON, M.D., Professor of Physical Diagnosis, University of Illinois College of Medicine; formerly Chief of Tuberculosis Staff, Cook County Hospital; and ELLIS B. FREELICH, M.D., Associate Professor of Medicine, University of Illinois College of Medicine; Professor of Medicine, Cook County Graduate School of Medicine; in collaboration with GEORGE C. COE, M.D., Instructor of Medicine, University of Illinois College of Medicine. *The Year Book Publishers, Inc.*, 304 S. Dearborn St., Chicago, 1941.

The authors have been impressed by the difficulties of medical students and practitioners in understanding the principles governing physical examination and have written a book to aid in the solution of these difficulties. This book gives essentials only. There is no dross. It is an intensely practical work, based on the idea that most cases can be diagnosed without the use of expensive and not-always-available special apparatus.

ELECTROCARDIOGRAPHY IN PRACTICE, by ASHTON GRAYBIEL, M.D., Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; Assistant in Medicine, Massachusetts General Hospital; and PAUL D. WHITE, M.D., Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, in charge of the Cardiac Clinics and Laboratory. 319 pages with 272 illustrations. Philadelphia and London. *W. B. Saunders Company*, 1941. Cloth, \$6.00.

That the electrocardiograph is an instrument of value in the diagnosis of certain heart conditions is an established fact. That every examination of the heart should include an electrocardiogram seems unnecessary, not worth the time and money.

The authors have written a text and reproduced eegs. to show just how this instrument may be made to best serve the cause of heart diagnosis, prognosis and management.

DOCTORS AND DOCTORS, Wise and Otherwise, on the firing line 50 years, by DR. CHARLES MCDANIEL ROSSER, with introductory foreword by DR. HO'MAN TAYLOR. *Mathis van Nort & Company*, Santa Fe Bldg., Dallas, Texas. 1941. \$3.50.

The author worked for his opportunity to be a



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doctor and he appreciates the dignity and the opportunities of membership in the medical profession accordingly.

Written largely on the personal side of the practice of medicine, by an observant doctor, with a well-developed sense of humor, the book could not fail of being entertaining. This reviewer would prefer to read that a patient was *operated on*, rather than *operated*; and it is generally said that Nicholas Senn was of Swiss parentage. Possibly he may have been born in a canton having a large Italian population, but neither his name nor his appearance would suggest Italian extraction.

There are chapters on Master Men of Medicine, The Mayos and the Mayo clinic, Code of Ethics, Modern Postgraduate Work, Referred Practice, The Doctor in Court, The Cults and The Basic Science Law.

Dr. Rosser's book brings to mind "The Physician Himself," by two Drs. Cathell, an attractive dealing with the personal side of the practice of medicine which enjoyed great popularity some decades ago. An equally eager reception is predicted for "Doctors and Doctors."

HEMORRHAGIC DISEASES: Photo-Electric Study of Blood Coagulability, by KAARE K. NYGAARD, M.D., Former Fellow in Surgery, the Mayo Foundation; former Assistant Surgeon, the University Clinic, Oslo; Fellow of the Alexander Malthe Foundation for Research in Medicine, Sur-

gery and Gynecology. Illustrated. *The C. V. Mosby Co.*, 3525 Pine Boulevard, St. Louis. 1941. \$5.50.

All prevailing methods of determining blood coagulability are surveyed and commented on. The photoelectric principle is discussed and the photelograph described. Then follow interpretation of the coagelgram, the results of investigation on the coagulability of blood plasma, the interaction of fibrinogen and thrombin and the quantitative estimation of prothrombin. The final grand division of the book deals with classification of hemorrhagic diseases, hemophilia, purpura, vitamin K, the hemolytic tendency in certain liver diseases and hemorrhagic disease of the newborn.

The book is the record of a vast amount of work under the advice and criticism of a number of eminent men well qualified to guide research, and it should prove of much value as a clinical aid in many grave conditions.

AN INTRODUCTION TO DERMATOLOGY, by RICHARD L. SUTTON, M.D., Sc.D., LL.D., F.R.S. (Edin.), Emeritus Professor of Dermatology, University of Kansas School of Medicine; and RICHARD L. SUTTON, JR., A.M., M.D., L.R.C.P. (Edin.), Assistant Professor of Dermatology, University of Kansas School of Medicine, with 723 illustrations; 4th edition. *The C. V. Mosby Company*, 3525 Pine Boulevard, St. Louis. 1941. \$9.00.

The authors intend the book for the student. "collegiate and postgraduate." If more is needed or desired use may be made of the bibliography—an

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innovation with this edition. This edition of the *Introduction* is condensed from the 10th edition of the authors' *Diseases of the Skin*.

Acne may be cured without x-rays. The list of excitant causes of dermatitis venenata is almost interminable. In psoriasis external remedies are essential, and internal remedies are rarely required. The cause of pemphigus is unknown and it usually proves fatal. Metabolic dermatoses are not uncommon. "Pruritus" is as bad a diagnosis as "eczema."

Prevent freckles by protecting against the sun; remove them with 1% bichloride in 25% alcohol dabbed on with a small swab 3 or 4 i. d. Nothing does much good in cases of ichthyosis. Vascular nevi occasionally disappear spontaneously; small doses of radium or x-rays constitute the best treatment.

For the cure of cancer of the skin the authors have come to depend more and more on the electrocautery. Pituitary extract sometimes relieves the pain of herpes zoster in dramatic fashion. Treatment of tinea of the feet must be carried out in great detail. In seborrheic dermatitis x-ray treatment has nothing to recommend it. Since regrowth of hair is extremely improbable it is well to help the patient "to accommodate his ego to his destiny."

A hopeful, but not too-hopeful, book.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE, edited by PHILIP BARD, professor of Physiology, Johns Hopkins University School of Medicine, with the collaboration of nine additional teachers of this and related subjects in our medical schools. Ninth edition. *The C. V. Mosby Company*, 3525 Pine Boulevard, St. Louis. 1941. \$10.00.

This edition is from the same hands that produced the previous edition. It has been expanded here, contracted there, as seemed best to set forth the various subjects with due regard to relative importance in the light of today. It may be well to remind that the eighth edition was the first after the death of Dr. J. J. R. Macleod, and that editions one to seven were the work of this Aberdeen, Scotland, and Toronto, Canada, Professor of Physiology.

A hasty perusal impresses the great need on the part of practitioners of medicine and surgery for bringing their knowledge of the physiology of the brain, of the kidneys, of the heart, of the liver, of the pancreas—of all the organs and systems—up to date.

THE 1940 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY. *The Year Book Publishers, Inc.*, 304 S. Dearborn Street, Chicago. NEUROLOGY, edited by HANS H. REESE, M. D., Professor of Neurology

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"GONOCOCCAL INFECTION IN THE MALE" by A. L. Wolbarst, M. D., Fellow, American Urological Association; Second edition, completely revised and enlarged. 140 illustrations. 7 colored plates. Published at \$5.50 by C. V. Mosby Co.; remainder copies at \$1.00 each while they last. Send no money. Pay Postman on delivery. MEDICAL BOOKS, ROOM 1808, at 1440 Broadway, New York City.

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In the last few years the advances in our knowledge of diagnosis and treatment of the conditions covered in this Year Book has been advanced so rapidly as to make it particularly necessary that every doctor in practice purchase each year's Year Book of Neurology, Psychiatry and Endocrinology as soon as it is made available.

ANEMIA IN COLLEGE WOMEN

(Helen Pryor & Mary Ferguson, Palo Alto, Calif., in *Northwest Med.*, Feb.)

Blood studies done on 364 Stanford women during the past two years suggest that achromic anemia is found just

as frequently as the secondary type at the college age level. In our study there were 145 instances of hemoglobin below 70% which is low enough to be classified as chlorosis; the red blood cell counts were relatively high, resulting in low color indices in only 11 of these cases.

Iron was given in several forms as Iextron, feosal, fe-cu-phyll; jeculin, reduced iron, and iron ammonium citrate.

Girls who received only Iextron made relatively more gains in red cell count than in hemoglobin, while those who received reduced iron, feosal, or iron ammonium citrate made larger gains in hemoglobin than in red cells. Jeculin gave the best results in stimulating increased numbers of red blood cells and building up hemoglobin. Fe-cu-phyll was very consistent in increasing both red blood cell counts and hemoglobin. Both jeculin and fe-cu-phyll contain concentrated vitamins.

Eleven cases were diagnosed chlorosis by the color index classification.

Good results in blood building were obtained with simple iron tonic therapy.

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SOME CHRONIC NEURALGIAS OF THE FACE: SUFFERER DESERVES RELIEF

(E. A. Coates, Melbourne, in *Austra. & New Zealand J. of Surg.*, Jan.)

The patient, usually a healthy-looking young woman, complains at great length and in detail of a constant agonizing pain in the jaw (usually the upper). I have seen the same condition in a young man who smiled as he related the agonies that he suffered, his sleepless nights et cetera. best handled by psychiatrists.

Examination reveals nothing definite and the pain does not conform to a known area or radiation. These patients are

There are a few patients for whom comfort and relief in their few remaining months may be obtained by interruption of nerve pathways. The intractable pain caused by a lingual carcinoma can sometimes be relieved by alcohol injection of the mandibular nerve. In other cases after radium treatment has been effectively employed and the malignant growth destroyed, the patient may suffer torture from a painful scar or from persisting neuritis of the inferior dental or glossopharyngeal and lingual nerves. Section of these nerves under local anesthesia is easily performed and will ensure the relief which the sufferer deserves. There is a tendency in some quarters to disregard the pain when the malignant lesion appears to be cleared up. Employ the radical element by all means, but heed the groans of the suffering patient. The human element tends to be submerged in a maze of mathematical formulas.

Perhaps the history of the Bloody Assizes would be a different story had the unfortunate and infamous Jeffreys obtained relief from his facial neuralgia and his bladder stones. In these days of mechanism and laboratory investigation, it is wise for us to remember that the patient calls the doctor usually to relieve pain, and when such relief is unobtainable by others means, interruption of nerve pathways is a merciful and also a scientific form of treatment.

DIAGNOSIS AND TREATMENT OF NEUROSYPHILIS

(A. L. Sabs, Iowa City, in *Northwest Med.*, Feb.)

The diagnosis of primary and second syphilis is made by having a high index of suspicion of the disorder, and then by proving the diagnosis by dark-field or serologic methods. Most of the late cases will be discovered by careful physical examination, in addition to the routine use of serologic methods in all cases which come under the physician's care.

Except for the special types of neurosyphilis, such as paresis, begin treatment with the least drastic methods and reserve trypanamide and fever treatment for use if response to arsenamine and bismuth is not satisfactory.

Treatment of neurosyphilis must be planned in terms of years. After completion of therapy, repeated physical and serologic examinations are necessary to safeguard the patient.

HYGIENE IN ANCIENT INDIA

Ciba Symposia

The remains of a city uncovered by Sir John Marshall and other archaeologists in the Indus Valley show that a primitive culture can be very highly developed in hygienic matters. The site of this city is Mohenjo-daro—the "city of the dead"—on the lower Indus in Sind. Today this region is completely barren, but about 3000 B.C., long before the so-called Aryan invasion, cultural conditions existed here such as were never again achieved in India. The houses were large and built of brick, unlike the mud hovels of later times. In the centre of the city was a large bath-

ing establishment, with a cold-water pool surrounded by a colonnaded hall. Perhaps, there was even a heating plant for warm water baths. A subterranean canalization system received the waste water from the houses and emptied into drainage canals. In many houses bathrooms have been preserved. They were generally furnished with water which the bather poured over himself, a practice still common in India today. There were garbage chutes in the houses, through which garbage slid into clay receptacles outside the houses.

All these arrangements were based upon a well-thought-out, hygienically unobjectionable system such as was never again developed in the Orient.

CERVICAL CARCINOMA WITH PREGNANCY AT FULL TERM

(W. T. STACY AND F. G. THOMPSON, JR., St. Joseph, in *Jl. Mo. Med. Asso.*, Mar.)

The incidence of carcinoma of the cervix in the pregnant woman has been given as .004 to 2.5%. Although the age periods of carcinoma and of pregnancy do not correspond, one should examine carefully cases that might be diagnosed wrongly as threatened abortion or placenta praevia.

Pregnancy stimulates the growth of carcinoma of the cervix and the symptoms of carcinoma of the cervix simulate those of some complications of pregnancy (threatened abortion, placenta praevia).

Adequate prenatal care with complete physical examination, especially speculum examination of the cervix, will disclose cervical polyps and erosions, and, as in this case, carcinoma of the cervix, as causes of vaginal bleeding during pregnancy.

We now believe that in cases of extensive carcinoma of the cervix complicating full-term (or near-full-term) preg-

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nancy the baby should be delivered by cesarean section without removal of the uterus and the carcinoma treated by radium and deep roentgen ray. The patient will live a much more comfortable life and the life expectancy is practically the same.

In the English edition (1634) of Ambroise Paré's work Hippocrates is credited with saying, "such as have hidden, or not ulcerated cancers, had better not to cure them, for healed they quickly dye; not cured, they live the longer." Such was this case.

CHUCKLES

The minister had received two tickets for the opera from one of his parishioners. Finding that he was unable to go, he rang up some friends and said: "An unfortunate dinner engagement keeps me from attending the opera to-night; could you use the tickets?"

"We should be glad to do so," was the reply, "but we are your unfortunate hosts."

Nurse: "There's a patient to see you doctor, and she is light-headed."

Interne: "Blond or delirious?"

First Patient: "I have just been having an argument with the dentist."

Second Patient: "Who won?"

First Patient: "It ended in a draw."

"I suppose you haven't any skin food."

"Only sossidges, miss."



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Dietitian: "Why, John, all of those potatoes have black eyes."

Kitchen Helper: "They must have been fighting in the pot."

Bus Driver: "Did you get home all right last night, sir?"

Ex-Patient: "Of course. Why do you ask?"

Bus Driver: "Well, when you got up and gave the lady your seat last night, you and she were the only two on the bus."

Uncle Ezry had been working industriously with a stub of pencil and a piece of paper. Suddenly he looked up happily.

"Doggone," he exclaimed, "If I ain't learned to write!"

Maw got up and looked over the scrawled lines across the paper.

"What do it say?" she asked.

"I don't know," replied Uncle Ezry, puzzled. "I ain't learned to read yet."

—Milwaukee Med. Jl.

Maid—"Madam, master is lying unconscious in the hall with a piece of paper in his hand and a large box by his side."

Mrs. Green (joyously)—"Oh, my new hat has arrived?"

—Vancouver Province.

A village parson's daughter eloped in her father's clothes. And the next day the *Blatter* came out with an account of the elopement, headed: *Flees in father's pants.*

One of my lady patients, a writer by profession, consulted me on various occasions regarding some pain in the right lower abdominal region. I suggested removal of the affected appendix, but she did not have funds and would not go to a public hospital. One day she appeared, her face beaming. "Well, doctor," said she, "I had my appendix removed five weeks ago by a big surgeon in a private hospital."

"How did you finance it?"

"I sold an article to the Physical Culture Magazine, entitled—"How I cured my Appendicitis with Physical Culture"—"New York Physician."

Just think! If people had to wait as long for the doctor to come as he waits for his money.

Doctor: "Have you told Mr. Brown that he is the father of twins?"

Nurse: "Not yet. He's shaving."

"The doctors now say that lowneck dresses help women ward off colds and pneumonia."

Well, I was at a swell restaurant last night where all the girls seemed to be trying to ward off lumbago as well."

Ensign, very insistent he must have leave, was asked the reason by commander.

"My wife is expecting a baby," he replied.

"Listen, young man, remember this—you are only necessary at the laying of the keel. For the launching you are entirely superfluous."

"Do you have anything for gray hair?"

"Nothing, sir, but the greatest respect."

"What happens when the human body is immersed in water?"

"The telephone rings."

Southern Railway's *SOUTHERNER*

This month appears Southern Railway's *THE SOUTHERNER*, to serve the territory between New York and New Orleans.

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Passenger units have thermostatically controlled heating and air conditioning, are insulated throughout. Judicious use is made of a number of advancements favoring gracious living. A good part of the luxury picture appears in the comfortable seating arrangement in all cars, the commodious and up-to-date dining car arrangements and the facilities for *en route* enjoyment offered in lounge, tavern and observation rooms.

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The whole scene is enriched with an attractive arrangement of photo-murals which have been especially planned to heighten the atmosphere of luxury and beauty in *THE SOUTHERNER*.

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Address *

Present-Day Trends in Obstetric and Gynecologic Practice*

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DURING the past two decades, particularly the last decade, radical changes in the management of many common obstetric and gynecologic conditions have been effected. For some unexplained reason but little change occurred in our national statistics on maternal mortality until quite recently. For instance, during the past five years this rate has been almost cut in half in New York City and a comparable decrease has occurred in the nation as a whole. It is difficult, even impossible, to obtain a corresponding decrease in mortality in various gynecologic conditions. However, from the experience of many individual hospitals it would appear that a considerable improvement in gynecologic practice has also been accomplished.

GYNECOLOGY

The improvement in gynecologic practice appears to be the result largely of a more logical management of our patients. Better pre- and post-operative care take high place. It appears probable that the success of a major gynecological operative procedure as gauged by mortality is dependent less on nature of procedure, skill of operator and all other technical factors, than upon pre- and post-operative care. The patient that has vomited long is now treated for avitaminosis; adequate bowel drainage is assured, dehydration and acidosis corrected, prior to the institution of the necessary

surgical procedure. Hemorrhage requires restoration of the blood volume, and lowered body temperature must be brought back to normal before attempting a major operation. Medical complications are recognized and appropriate measures instituted. The general condition of such patients can often be greatly improved so that they are able to withstand the surgical procedure indicated.

Elective operation may be best indefinitely deferred. Formerly, it was not uncommon to see patients with varying degrees of anemia subjected to major operative procedures. Except in dire emergency such practice is only to be condemned. The anemia is to be corrected by transfusion and/or medication; then the patient may be subjected to the indicated surgery.

General anesthesia has given way to local infiltration and nerve block in the elderly patient requiring plastic surgery. Nitrous oxide-oxygen anesthesia is contraindicated in the colored race. Local infiltration, block and caudal anesthesia are much more frequently than formerly and have greatly reduced the hazards of any given operation. Ether still remains a valuable agent for general anesthesia. Ethylene and cyclopropane may at times be used to advantage. Pentothal sodium by vein is now available to induce general anesthesia for operations of short duration where an inhalation agent is contraindicated. By wise choice of

*Address delivered by invitation to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, N. C., Feb. 24th and 25th.

the means of anesthesia, postoperative pulmonary complications have been greatly reduced, and postoperative shock has been so largely reduced that its development following a well conducted operation may usually be considered as the result of an error in judgment as to the proper preparation of the patient for operation. Despite the greater margin of safety afforded, conservatism has been progressive.

The management of abnormal uterine bleeding has been rationalized and more or less standardized largely because of a better understanding of the pathology involved. Before a major operative procedure is considered, a biopsy of the cervix and a dilatation and curettage are usually indicated. In the presence of benign tissue and in the absence of submucous fibroids, hysterectomy is not indicated. The presence of myomata does not necessarily imply that these tumors are the cause of the bleeding. In general, curettage, repeated if necessary, gives excellent results. Occasionally, in women over 40, it is necessary to castrate by x-ray or radium irradiation. Hysterectomy is never indicated for the cure of bleeding from a uterus of normal size and with a non-malignant lining.

The indications for hysterectomy or myomectomy for fibroids have been fairly standardized. Hysterectomy is done by the subtotal technic in a premenopausal patient who has a sizable tumor with menorrhagia or metrorrhagia, and myomectomy is not feasible. In the absence of abnormal bleeding, hysterectomy or myomectomy is indicated in few cases unless the tumor rises well up into the lower abdomen. Simple myomata rarely cause pain. Associated bleeding may be due to pathology of the endometrium—carcinoma, hyperplasia etc., the fibroids being in no way responsible for symptoms. In many instances fibroids mature without reaching a size that, in itself, indicates their removal, and oftentimes causes no symptoms and constitute no hazard to the welfare of the patient if left in situ.

Formerly, it was common practice to carry out extensive perineal operations and immediately thereafter to perform a more or less extensive abdominal operation. In general, this is now a completely out-moded procedure. A plastic operation for cystocele, rectocele, prolapse etc. is preferably carried out as a perineal procedure and a cure effected from below. Any indicated laparotomy should be carried out as a separate procedure at an elective date prior to or following the plastic operation. General anesthesia is not often the choice for plastic operations on patients over 50 years of age. A combination of pentobarbital sodium, morphine, scopolamine, local infiltration and pudendal

block gives excellent results.

Prior to 1920 removal of the fallopian tubes because of inflammatory complications was a relatively common operation. As has long been taught, this operation should never be carried out during the acute or subacute phase of the disease, and the vast majority of such cases will respond to palliative measures. The operation should be reserved for those patients who have large discrete, thick-walled tuboövarian masses, and which show a tendency to spontaneous regression. If surgery is indicated in such patients, radical measures, including the removal of both adnexal organs, usually are necessary in order to effect a cure.

By the proper employment of sulfathiazole or sulfadiazene the gonococcus may be eliminated from the genital tract in a matter of hours, and cure established in a large percentage of infected individuals in a matter of days.

Suspension of the uterus in days gone by was one of the most common gynecological operations. Today, many authorities consider it inadvisable in any case to perform an abdominal operation solely for this purpose. Likewise a pelvic laparotomy is never indicated because of chronic pain unless there is associated palpable pelvic pathology. Amputation of the cervix during the reproductive years was formerly very commonly done. Coagulation or cauterization affords excellent results and usually makes such an operation unnecessary. We no longer do other intraabdominal operative procedures after the performance of a major gynecological operation. Experience has taught that the average patient in good condition can withstand a hysterectomy or a cholecystectomy; but when both procedures are carried out at one operation the mortality is much greater than the sum of the mortalities following the individual procedures.

During recent years the medical profession of this country has been deluged with literature by ardent enthusiasts and commercial drug houses concerning the therapeutic application of various endocrine preparations, recommended for vaginal bleeding, dysmenorrhea, menopausal symptoms, neuroses, sterility, threatened abortion, premature labor, various psychiatric manifestations and so on. In many instances such treatment is begun without even a casual preliminary pelvic examination. An extensive and critical review of the literature suggests that there are but few positive therapeutic indications for the use of these extracts. Moreover, one is impressed with the fact that the leaders who have done most of the fundamental investigations along these lines are the most reticent as to the clinical use of these preparations. It is true that the vasomotor phenomena associated

with the menopause may be temporarily more or less completely relieved by the administration of natural or synthetic estrogenic substances. There is no indication in the absence of vasomotor disturbances that these preparations will in any way alleviate the psychiatric abnormalities of such patients. Progesterone may be of some value in rare instances in preventing abortion, but this has not been conclusively established. The same preparation may at times relieve patients with severe dysmenorrhea. At the same time the establishment of permanent relief by such means can only rarely, if ever, be accomplished. It appears probable that 99 per cent of endocrine therapy, as practiced at the present time, is not only useless but at times may be actually harmful. It does not rest on a sound scientific basis. The drug houses have placed a large number of these preparations at our disposal. Their exaggerated claims appear attractive, but in the last analysis the medical profession is responsible for the treatment.

Little need be said here of the various indications for the employment of the sulfonamide group of drugs in our field. Sulfanilamide has proven most useful in the treatment of hemolytic streptococcus infections, post partum or post abortion. However, 98 per cent of such infections are caused by organisms other than the hemolytic streptococcus. The urinary tract may usually be rendered sterile after the administration of adequate amounts of the same drug under carefully controlled conditions. Gonorrhea of the female may be cured in a large percentage of cases if the patient is kept in bed and given adequate doses by day and by night. Our experience with sulfathiazole has shown it to be superior to sulfanilamide in the treatment of gonorrhea and in many urinary-tract infections. In addition, it is valuable in staphylococcus infections of the genital tract and in general it is much less toxic than sulfanilamide. My most recent experience has been with sulfadiazene, which promise of being more efficacious than either of the previously mentioned drugs, yet almost non-toxic. It is largely in the experimental stage but at the moment it has supplanted sulfanilamide, sulfapyridine and sulfathiazole in the treatment of the conditions mentioned. The introduction of these compounds is of epochal importance; it remains for the future to evaluate their significance. It would seem reasonable to hope for even better preparations of this group.

OBSTETRICS

PRENATAL CARE

The general adoption of prenatal care has played a very important role in the recent reduction of maternal mortality in this country. Extensive sta-

tistical evidence has been presented during the past few years to substantiate the statement. Where prenatal care is adequate, and proper diagnostic and therapeutic measures instituted, we may expect the elimination of congenital syphilis. The incidence of severe preëclampsia and eclampsia are greatly reduced by the institution of treatment in the incipency. Deaths from cardiac failure in patients with organic heart disease may be largely prevented. Extension of life in patients with hypertension or renal disease has been effected by the prevention of conception. Diabetic coma and death has been reduced to negligible proportions. Antepartum correction of anemia has been one of the most recent improvements in obstetric care. Suitable treatment of patients with upper-respiratory infections has reduced significantly the incidence of pneumonia and puerperal infection. In general, the early detection of medical, surgical and obstetrical complications and the institution of appropriate treatment, have greatly reduced morbidity and mortality.

It is important to note that patients who give a history of having had a urinary-tract infection need careful investigation and evaluation before they are permitted to have a subsequent pregnancy. The earlier treatment is instituted the more satisfactory the end results. The late sequelae of neglected infections initiated during pregnancy have only recently been generally recognized. Our most brilliant results with the sulfonamide drugs are accomplished in acute infections, while our most disappointing results are obtained in longstanding infections.

HEMORRHAGE

During the time covered in this survey radically different methods of management of patients with antepartum hemorrhage occurring during the last trimester of pregnancy have been used. It is generally recognized that the amount of bleeding gives no indication as to the existence of placenta praevia. A tablespoonful of blood loss at this time may be indicative of a central placenta praevia, an insignificant polyp or an erosion of the cervix. We no longer regard antepartum bleeding as an indication for immediate diagnostic and operative treatment. The only emergency is to immediately get such an individual into a well equipped hospital and provide a readily available source of blood. Local examinations are deferred. It is our practice to keep such patients quiet in bed on the delivery floor under observation for a few days, assuming that the condition is placenta praevia. The introduction of the soft-tissue x-ray technic has provided us with a valuable diagnostic aid. In at least

90 per cent of such patients a fairly definite diagnosis can be made by this means.

When pelvic examination is indicated after a few days' observation it should always be done in an operating room where full preparations have been made for the introduction of a bag, rupture of the membranes, or the immediate performance of cesarean section. Vaginal or even rectal examinations, in the absence of such preparations, are definitely contraindicated. If blood loss has been extensive transfusion before, during and after an operative procedure is indicated. In the case of central placenta praevia, and of marginal placenta praevia where the patient is not in labor, cesarean section is often indicated. On the other hand, if the patient is in labor the cervix partially dilated, rupture of the membranes or insertion of a bag usually gives good results. We have learned through bitter experience that in this latter group of patients, spontaneous delivery is the method of choice. It is a fatal error in such circumstances where the breech presents, to exert any traction whatsoever; this is because of likelihood of trauma to the lower uterine segment with resulting shock and hemorrhage.

THIRD STAGE

A great deal of attention has been devoted during the past few years to the correct management of the third stage of labor. Many investigators have pointed out the necessity for accurately measuring the blood loss at this time. We no longer wait for the development of shock before starting a transfusion. Knowing the cell volume or hemoglobin percentage, the weight of the patient and the volume of blood-loss, the need for a transfusion can be accurately calculated by means for a formula. Extensive investigations of the pathology of shock has been undertaken by many and we know that if initial shock following hemorrhage is not promptly corrected, we may have to contend with secondary shock, with anoxemia and increased capillary permeability. At this time much serum is lost from the blood vessels into the tissues which aggravates the existing condition. If such a state is permitted to continue an irreversible phenomenon develops. For these reasons, the deferment of transfusion should not be permitted. Crystallloid or colloid solutions are not satisfactory for infusion purposes, although they may temporarily raise the blood pressure by increasing blood volume. The effect is often of short duration and accordingly may give us a false sense of security. If whole blood is not available blood plasma or serum will give almost as good results. Plasma may be kept for relatively long periods of time under refrigeration conditions and should be

available in smaller institutions where it is not practicable to maintain blood banks, and for home use. This will undoubtedly save many lives in the future that are now lost because of hemorrhage.

ANESTHESIA AND ANALGESIA

The large number of anesthetic agents advocated and the different methods of using them is evidence of the fact that as yet no entirely satisfactory method of analgesia is as yet available. In general, the use of morphine and scopolamine in moderate dosage gives fairly good results. Where scopolamine is not repeated it is quite adaptable to home practice and it often provides a fair degree of amnesia and analgesia. Ether, by rectum, if the cervix is more than half dilated, has been used very extensively and must be considered a relatively safe agent. However, the use of these drugs will increase the incidence of hemorrhage.

Pentobarbital sodium is not primarily an analgesic drug and the desired result is accomplished by exceeding the sedative dosage. Satisfactory analgesia can often be accomplished by the use of .3-.5 gram combined with one or two doses of scopolamine. It is essential that the patients be constantly supervised. All analgesic drugs, morphine in particular, are contraindicated in premature labors or where the expected size of the baby is 2500 grams or less. Accordingly, in premature labors a month or more before the expected date of confinement, analgesic agents should not be administered. During the second stage of labor nitrous oxide-oxygen administered at the time of the contractions affords very satisfactory analgesia.

Anesthesia at the time of delivery, if at all possible, is much to be desired. In general, ether or nitrous oxide or a combination of these agents may be used. It is of the greatest importance that adequate amounts of oxygen be administered to prevent fetal anoxemia. It is usually impossible to attain surgical anesthesia with nitrous oxide alone without producing this undesirable effect on the baby. During the past few years local infiltration and pudendal block anesthesia have been used with increasing frequency. This method has in general given excellent results. It has several advantages over general anesthesia in that it has no effect on the baby, the blood loss is less, uterine contractions are not interfered with and pulmonary complications are decreased. This form of anesthesia appears indicated in the presence of toxemia, hypertensive disease, premature labor, upper respiratory infections or other medical complications.

CESAREAN SECTION

So much has been written in recent years con-

cerning indications, contraindications, uses and abuses that I shall confine my remarks to what I believe well established facts. Morbidity and mortality are several times greater than in spontaneous delivery irrespective of the care and the facilities available. For this reason the indications must be based on sound judgment. Under ideal conditions this procedure must not constitute an escape from the art and science of obstetric care. At the same time it is often of the greatest value to the patient with contracted pelvis, placenta praevia, premature separation of the placenta and a number of other grave conditions.

The classical type of operation is the procedure of choice prior to the onset of labor. The low cervical section (with double peritoneal flaps) is relatively safe during the first 12 hours of labor if there is no evidence of intrapartum infection. Following the lapse of this time the extraperitoneal (Latzko, Waters etc.) or radical (hysterectomy) type of procedure provide the only method that is reasonably safe. The dangers mount rapidly following each hour of labor and it is urgent that a decision be reached early in labor.

Local infiltration anesthesia is far superior to any inhalation anesthesia and decreases the dangers to both mother and child. The procedure can be carried out with relatively little discomfort to the mother, especially if nitrous oxide-oxygen analgesia is provided for a brief interval during the extraction of the child.

PUERPERAL AND POST-ABORTION INFECTIONS

Despite the use of the sulfonamide drugs, it is still essential to exercise every precaution against the development of infection. Among important factors along these lines are the treatment of anemia during pregnancy, the prevention and control of upper-respiratory infections, and other hygienic measures that will insure the patient being in an optimum condition at the time of the onset of labor. Careful aseptic precautions during the management of labor and a minimum of interference in the birth canal are still essential.

It is highly important to recognize infections early and to identify, if possible, the nature of the infecting organism. If a hemolytic streptococcus is responsible, sulfanilamide or sulfadiazene is the drug of choice. For staphylococcus infections sulfathiazole appears to be superior. Welch-bacillus infections will respond to large doses of sulfanilamide. The colon-aerogenes groups of organisms respond fairly satisfactorily to sulfathiazole or sulfadiazene. When the infection is severe, a relatively large initial dosage is advisable, following which the drug should be administered every four hours by day and by night. If possible, the concentration of the drug in the blood should be determined at frequent intervals and signs and symp-

toms of toxicity looked for. In general, the earlier the therapy is instituted the better our results will be. It is for this reason that early bacteriological investigation is so necessary so that one can be prepared to prescribe the most appropriate drug when the indication arises.

TOXEMIA OF PREGNANCY

Despite the many extensive investigations that had been and are being conducted in an attempt to discover the etiology of these conditions, we are still ignorant as to their exact nature. Nevertheless, symptomatic treatment is fairly satisfactory, especially when instituted in the early stages of the derangement. For this reason it is essential that careful records of the weight, systolic and diastolic blood pressure and examination of the urine be kept. Most such patients will respond satisfactorily to rest in bed and a diet with a low salt content. In the more severe forms, such as preëclampsia and eclampsia, glucose by vein, sedatives and if an acidosis is present, sodium lactate, may be indicated. Radical measures aimed at delivery during the acute stage of the disease have no place and are positively contraindicated.

One of the most efficient means of post-graduate education in obstetrics is afforded by a well-conducted group study of fatal cases. An able discussion of such case records, participated in by all practitioners doing obstetrics, will do much to improve obstetric practice in the future.

A NEW LUNG DISEASE IN NEWBORN INFANTS

(J. M. Adams, Minneapolis, in *Jl. A. M. A.*, Mar 8th)

The disease appeared in epidemic form with 32 cases during Jan., Feb. and March, 1937. There were 9 deaths. The disease is similar to influenza, but ferrets inoculated with fresh material from the patients failed to generate neutralizing bodies against the influenza virus. Further evidence that the epidemic infection was a virus disease was indicated by its extreme contagiousness, its distinctive symptoms (cough, low-grade fever, labored breathing and skin blueness), characteristic lung and blood changes and the failure of investigators (Minnesota State Board of Health) to identify the causative bacterium.

The mortality was 100 per cent in the premature infants affected. Newborn infants have a short immunity to other than virus diseases.

THE UNIVERSITY

(J. H. Hildebrand, Berkeley, in *Jl. Asso. Am. Med. Col.*, Nov.)

The most important feature of a university education to the individual is *not* that it may enable one to *earn more money, but, instead, to need less*. A person who has trained himself to intellectual companionship with the great of all ages does not need to pay for the social splurges that sometimes seem necessary in order to maintain ordinary social prestige. The one advantage of being a University professor is that one belongs to the greatest fraternity of all, the fraternity of scholarship. Wherever a scholar goes in the civilized world, he is welcomed by equals and entertained without vulgar ostentation. The poor business man, on the contrary, is forced to entertain his colleagues and competitors in a way designed to give the impression that he is one of the successful.

Further Studies on a Simplified Cough-Plate Method For the Early Diagnosis of Whooping Cough

Evaluation of the Instillation of Topagen Intranasally in the Prevention and Clinical Arrest of the Disease

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GLADYS K. MULLENIX, R.N., and L. BATES FUSTER, R.N.
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THE PURPOSE of this article is to report further on our studies relative to the simplified, more rapid diagnosis of pertussis; and to report briefly our extensive studies on the evaluation of the new Topagen (Mulford Biological Laboratories, Sharp & Dohme) in 275 cases of pertussis and on some persons who had been directly exposed to the disease.

Our use of this simplified cough-plate method dates from the severe epidemic of whooping cough that prevailed in the City of Greenville, South Carolina, in late 1933 and early 1934. A few of our local physicians approached us in regard to devising a more rapid method of diagnosing the disease. All culture media capable of growing *Haemophilus pertussis* (B. pertussis, or Bordet-Gengou Bacillus) were difficult to prepare and growths of colonies were slow to make their appearance. Our first efforts were aimed at the preparation of a simple and inexpensive agar culture medium upon which *H. pertussis* would grow quickly and characteristically in sufficient abundance for the preparation of stained slides and for serological study.

In most localities having no facilities for bacteriological diagnosis the clinician must diagnose on the characteristic whoop, first heard between the second and third week of the disease or not at all. So there is a wait until the acute infectious process of the bronchial tree has become established and valuable time for the much-needed treatment has been lost.

Our methods of attacking the problem over the past seven years have been to: (1) isolate *H. pertussis* from a given suspect by the cough-plate method as early as possible in the disease; (2) to bring the isolated patient under an approved form of treatment as soon thereafter as is possible.

Preparation of Glycerine-free Potato-Agar—

Nutrient agar (Difco dehydrated) gms. or c.c. 11.50
Water, distilled, to make 450.00.

This is prepared in accordance with the direc-

tions found on the label of the bottle of Nutrient Agar, except some of the water is left out of the medium to prevent softening and sliding of the congealed agar in the Petri dish.

The potato extract is prepared by cooking in the usual manner three pounds of old potatoes, either thoroughly scrubbed or peeled, in approximately 1500 c.c. of distilled water, then straining through several layers of gauze.

This potato extract is next placed in dry sterilized containers and autoclaved at 15 pounds pressure for twenty minutes. If there is evidence of bacterial contamination in the potato extract, re-autoclaving is done.

The plates are usually prepared extemporaneously by liquefying the agar by water-bath in the usual manner and pouring the required amount into sterile Petri dishes to which has been added 2 c.c. of the sterile potato extract. After gentle and thorough rotating of the Petri dish the potato-enriched nutrient agar is allowed to congeal at room temperature. Then the cough-plate is wrapped and held ready for exposure by streaking or coughing during paroxysm, and incubation and bacteriological study for identification of *H. pertussis*.

Method of Exposing or Inoculating the Cough-Plate—

The cough-plate may be exposed or inoculated in two ways:

(1) By allowing the suspect, *during a paroxysm only*, to cough on the agar held not more than five inches in front of the mouth. Voluntary coughing is too shallow to bring up infectious material. These are the instructions given by the physician to the parents.

(2) The plate may be also exposed by streaking the surface of the agar by the physician or visiting nurse. The child is allowed to cough or go through a paroxysm after which the physician or nurse, using flashlight and tongue depressor, passes the sterile swab over a large area of the throat and

then lightly strokes the surface of the potato-agar to inoculate the surface of agar not too sparsely nor too thickly.

Cough-plates treated in this manner and promptly incubated at 37.6° should, if *H. pertussis* be present, give the positive presumptive test in four hours. The test may be called positive for *H. pertussis* when the characteristic clear zones occur around the colonies over the agar in the plate, or beside the streaked area in case the swab method was used.

Sufficient pertussis organisms for staining or serologic study may develop on this potato-agar plate in from six to eight hours. The rapid development of the organism on this culture medium is attributed to the absence of glycerine—in itself a preservative or bacteriostatic. The presence of rather high concentration of glycerine in the old Bordet medium is, in our opinion, sufficient to retard the development of *H. pertussis* for from forty-eight to seventy-two hours.

Identification of Organism—

McLeod² made the following important observations:

(1) *B. influenzae* grows quickly; *B. pertussis* grows slowly.

(2) The appearance of the colonies on Bordet-Gengou medium are quite distinct; those of *B. pertussis* being quite unlike those of any other bacterium that is commonly found in the sputum, and therefore the bacteriological diagnosis can frequently be made by inspection of the plates alone (with the unaided eye or a magnifying glass).

Our studies of the organism over the past seven years lead us to conclusions in agreement with those of McLeod.

Macroscopic Appearance of Colonies of *H. Pertussis*—

Kendrick and Eldering³ describe the macroscopic appearance of the colonies of the Bordet-Gengou Bacillus as follows:

By transmitted light, colonies are smooth, raised, glistening, pearly and almost transparent, while colonies of the Gram-positive cocci in general appear duller, darkly colored and opaque.

Our findings agree with theirs. We have also consistently observed a clear zone immediately surrounding a colony of the *H. pertussis*, produced by a ferment secreted by the organism which breaks up the starch and starch-like substances of the potato extract. In our experience only the *H. pertussis* and an unidentified slender Gram-negative bacillus occasionally found in the saliva and bronchial secretions, and possibly a few yeasts, have caused this digestion of the potato medium—

a valuable aid in locating the colonies to be studied.

Preparation of the Slide—

A loopful of water is placed on a slide and one or a group of small clear colonies from the middle of a clarified area on the potato-agar plate fished off. Frequently, it is necessary to use a watchmaker's magnifying glass or a simple reading-glass in the fishing. After thorough emulsification of the colony with the platinum loop in the droplet of water on the slide, the specimen is dried and fixed in the flame. The elements of the Gram-staining method are next applied in their order of succession, and the specimen placed under the oil immersion objective (900X). Occasionally a magnification of 1675 is used for more detailed study of the *cocco-bacillus*.

Microscopic Appearance of *H. Pertussis*—

Using the usual purple aniline (triphenylmethane) dyes—crystal violet, methyl violet, bismuth-violet—the Bordet-Gengou bacillus is stained a deep purple and appears as a short, stubby bacillus or *cocco-bacillus* in young cultures grown on potato-agar medium, in size from 2.5-5 micra, sometimes in chains of varying length. The forms of the organisms found from the third week of the disease and later depart somewhat from the classic descriptions, becoming larger, and slenderer, and even fusiform, and many strains being arranged in chains of varying length. Whereas the younger forms are all strongly Gram-negative, these older forms oftentimes appear midway between Gram-positive and Gram-negative. We have never found them to be strongly Gram-positive.

MICROSCOPIC AGGLUTINATION OF *H. PERTUSSIS*: METHOD CORROBORATING THE IDENTITY OR THE ORGANISM

Although pertussis *cocco-bacilli* are very uniform in cultural, morphological and staining characteristics, they vary greatly in size. The organisms which we have found invariably in typical whooping cough are larger than specimens of *H. pertussis* obtained from the Northern United States. With this organism as with many higher plants and animals—those inhabiting the southern and tropical regions are larger, as a rule, than those occurring in the more temperate, northern sections.

On account of these variations in size, and to a much less extent in form and in staining characteristics, we frequently corroborate the microscopic laboratory diagnosis by microscopic agglutination in the hanging drop, as follows:

After the organisms are isolated on the cough-plate in pure culture, some of the small colonies

are fished off of the surface of the potato agar with the platinum loop and thoroughly emulsified in the middle of a clean cover-glass in a small drop of sterile water. Using a double-welled hanging-drop slide, the first cover-glass is carefully inverted over one of the wells and sealed around with petrolatum. Another cover-glass is prepared in like manner only a drop of similar size of *H. pertussis* agglutinating serum, 1:400 (Sharp & Dohme) is added and thoroughly mixed with the end of a sterile hypodermic needle through which the serum was drawn from the original container. The drop of emulsion over the control well is observed for a few seconds around the edges of the hanging drop, as usual, in order that the appearance and distribution of the organisms might be taken account of, and then the organisms in contact with the immune serum are quickly moved under the usual high-power objective, care being taken to observe the organisms at or near the edges of the hanging drop. In the agglutinating reaction, the organisms are tightly clumped in from five to ten minutes of contact with the agglutinins of the serum, whereas no change whatever occurs in the scattered organisms in the control or in the hanging drop containing none of the serum. Thus the presence or absence of suspicious, atypical forms (from cultural, morphological or staining standpoints) is established after a standard and generally accepted method. We have observed on numerous occasions certain uniform-appearing streptococci isolated from cases of clinical scarlet fever that behaved in a similar manner in the presence of scarlet fever antitoxin. This serum added slightly in excess to suspensions of such streptococci first causes a clumping of these, this is followed in a few seconds by complete disappearance of the streptococci (lysis). The tendency of this immune serum to cause total lysis of the specific organisms may account for the efficacy of scarlet fever antitoxin in the clinical course of the disease.

THE EVALUATION OF A RELATIVELY NEW IMMUNIZING AGENT FOR WHOOPING COUGH—TOPAGEN (Mulford Biological Laboratories, Sharp & Dohme)

In 1932, following the work of the Research Staff of the Mulford Biological Laboratories of Sharp and Dohme, there appeared on the market a new product designed to create an active immunity to the Bordet-Gengou bacillus by nasal instillation rather than by administration of the agent by the usual parenteral route.

Owing to the shortage of helpers competent to administer a hypodermic or intramuscular injection in the proper manner, our need for such an

immunizing agent was urgent. Moreover, bringing children out of whooping cough isolation to the clinic or health office for inoculation is not to be encouraged: first, because of risk of chilling the sick child; and, second, because of possible exposure to other susceptibles, adults as well as children.

Our practice has been to establish a diagnosis of whooping cough, preferably by cough-plate culture as described, as soon as possible, and to commence the Topagen treatment at once; also to demonstrate to the mother or some intelligent neighbor the proper intranasal instillation of the soluble antigen as follows:

Administration—"The application of pertussis topagen is by intranasal instillation. While the method of application is simple and painless it should be exact. To be effective the antigen must be applied to the area of the middle and superior turbinates. The mucous membrane covering these turbinates is capable of absorbing the antigen. The mucosa of the inferior turbinate does not absorb the antigen. For instillation of the antigen the patient's head should be below the body level (exaggerated supine position)"—for instance over the edge of a bed, care being taken not to force the child's head back too far.

The dropper in the original vial is then inserted with the tip toward the top of the head and turned toward the turbinate mucosa. The method of instillation is shown by illustration in explanatory folder (M390-C, Mulford Biological Laboratories, Sharp & Dohme). The dropper is then inserted and the antigen slowly expelled. "The contents of one dropper ($\frac{1}{4}$ c.c.) is instilled into each nostril once each day (in the treatment of pertussis) or every other day (for prophylactic measures in contacts of pertussis)." The patient should remain in the reclining position for 3 to 5 minutes after the application of pertussis topagen. Four to five treatments are necessary before improvement may be expected. To minimize the recurrence of the paroxysm (whoop), treatment should be continued until symptoms have completely disappeared.

"The antigen may also be applied with long cotton pledgets placed over the area of the middle turbinates for a period of 5 minutes."

If the nasal mucosa is markedly congested, it may be necessary to relieve the congestion before instilling the antigen by the local application of an appropriate solution of ephedrine-HCl, racemephedrine-HCl, or propadrine-HCl.

"If the nares contain an excess of mucus, cleaning out of the mucus should be attempted before applying the pertussis topagen."

Pertussis topagen contains a minimum of pre-

servative which does not harm or irritate the delicate mucous membranes of the nasal cavities.

"After each instillation, the dropper, before it is returned to the vial, should be carefully wiped with a pledget of cotton moistened with alcohol in order to avoid contaminating the antigen.

Where more than one patient is being treated, an individual vial should be provided for each patient."

Where more than one patient is being treated, an individual vial should be provided for each patient."

A compilation of the clinical results reported by different investigators is highly favorable. Of the cases treated early in the paroxysmal stage, 85 per cent are definitely benefited: whereas, of those treated late in the disease, improvement is produced in about 40 per cent.

Regarding the results obtained in the treatment of whooping cough with pertussis topagen, Slesinger⁴ states: "We feel that the high percentage of favorable results and the simplicity of the method of treatment class this intranasal antigen as a valuable therapeutic procedure in the treatment of active cases of whooping cough."

Gold,⁵ in reporting a series of cases in which pertussis topagen was used, commented: "In our experience, its control produces a startling change in the clinical picture of the children we treated with the soluble antigen. It also appears to shorten the duration of the disease. We feel that this specific pertussis soluble antigen will prove to be a valuable adjunct in our therapeutic armamentarium."

In reporting another series of cases, Schooten,⁶ "The clinical improvement noted among the majority of patients receiving pertussis soluble antigen was encouraging and warrants its further trial and use by others. The clinical course of the small infants for whom therapy was begun early in the disease was gratifying."

In our series of 275 cases of whooping cough in under privileged children in which topagen was used our favorable results were in accord with the findings of earlier investigators; i.e., of those treated early in the disease 80 per cent are benefited by treatment, whereas of those treated after the disease has been in progress for some time improvement takes place in 50 per cent of the cases.

PREVENTION

In our experience the disease is made decidedly lighter or prevented in approximately 60 per cent of non-immune children.

No doubt, the earlier the topagen is administered in the incubation period the more apt the

child is to be protected. There is more time for building up immunity to the artificially applied antigen in the form of topagen.

Further studies in active immunization with topagen are in progress and will be presented in future articles on the important subject of pertussis.

Case Reports

Case 33.—White girl, aged 16 months, had been coughing for two days; cough-plate inoculated by coughing in the routine manner which proved positive for *H. pertussis*. Topagen intranasally started on the fourth day of cough, using one very small dropperful of the antigen in each nostril once daily with the head slightly hyperextended in accordance with directions inclosed in the original carton.

The cough and excessive bronchial secretion cleared up within ten days although the plate remained positive for *H. pertussis* for a week after the cough dried up.

Case 103.—White boy, aged 2 years, had been having very severe paroxysms of coughing for ten days. Routine cough-plate was strongly positive for *H. pertussis* in almost pure culture. Routine intranasal administration of topagen instituted at once and clinical recovery was complete within ten days.

Case 177.—White girl, aged 2 years; cough for four days; proved strongly positive for *H. pertussis*. After seven days intranasal treatment with topagen the cough disappeared; the organisms persisting a week longer.

Case 187.—White girl, aged 6½ years, severe paroxysms of coughing for three weeks. The child had gone well into the whooping stage and was losing much food by vomiting during paroxysms. The cough-plate revealed almost a pure culture of the Bordet-Gengou organism and instillation over the superior and middle turbinate mucosa of topagen was commenced at the beginning of the fourth week of the disease, a small dropperful once each day into each nostril, with slightly hyperextended head allowing the head to remain in this position for two minutes to warrant thorough contact with the mucosa covering the superior and middle turbinate bones (for optimum absorption of the antigen).

This cough disappeared after one week's medication with topagen, although she was held in isolation and kept out of school for one week longer that the organisms might be destroyed or rendered avirulent by her own antibodies. She was clinically recovered, however, after the fourth week.

SUMMARY

1. A description is given of a rapid, simplified cough-plate method for the early diagnosis of whooping cough as carried out in our laboratory for the past seven years.

2. The great need for, and advantages of, such a method for the protection of the public health are discussed.

3. The essentials of the methods of other investigators of the characteristics of *H. pertussis* are given and mention made of our full agreement and accord with their findings.

4. The preparation of the simple, glycerine-free potato-agar and the methods of exposing and inoculating the cough-plate are described.

5. The preparation of the specimen for microscopic study, staining of the organism, its appearance under the oil-immersion objective, preparation of specimen for agglutination or lysis in the hanging drop with mention of our current method of observing these phenomena as to the Bordet-Gengou organism and streptococcus scarlatinae are in sufficient detail for practical laboratory use and diagnosis.

6. Our seven-years' experience with the relatively new topagen (Mulford) as a therapeutic agent in under-privileged children has proved it to be clinically of great value and its method of use are described.

7. A few brief typical reports from our series of 275 unselected cases are presented.

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—Department of Health, City Hall.

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THE USE AND ABUSE OF SPINAL ANESTHESIA

(P. E. Craig, Coffeyville, Kansas, in *Clin. Med.*, Mar.)

No other method of anesthesia will permit the use of such a minute dose of a drug, and yet maintain complete and prolonged analgesia. The early symptoms of vasomotor and respiratory depression are transitory and, upon disappearance, leave the surgeon free to perform the operation under an ideal condition of muscular and visceral relaxation.

Injury to the intraabdominal organs is negligible, because the intestines are contracted, facilitating easy manipulation; and when the patient is placed in the Trendelenburg position the gut gravitates cephalad, making

the use of restraining pads unnecessary. Peristalsis is augmented and the expulsion of flatus stimulated; speed in the performance of nontraumatic surgery is greatly favored; and postoperative morbidity and mortality, in both clean and septic cases, are reduced.

While applicable to the average surgical risk, it has definite contraindications:

1. Abnormally low blood pressure, due to shock or anemia following an acute hemorrhage. Since a spinal anesthetic lowers the blood pressure still further, it is necessary to overcome the hypotension, by the use of intravenous saline infusions or by blood transfusions, before the anesthesia is begun.

2. Cardiopathies: Heart disease, not perfectly compensated, cannot tolerate a rapid fall in b. p. A low pulse pressure with a high diastolic reading denotes a poor cardiovascular reserve and labels the case a poor risk.

3. Extreme hypertension.

4. Psychoneurosis: Patients who may later attribute symptoms of backache, dizziness, or headache to the spinal anesthetic, and institute malpractice proceedings, should not receive it.

5. Active pulmonary tuberculosis, and pleural or pericardial effusions: Lung disease decreases pulmonary ventilation, which is further decreased under spinal anesthesia.

6. Pott's disease, syphilis, generalized septicemia, and diseases of the meninges or spinal cord.

7. Malformation of the spine.

It is important, in preparing for spinal anesthesia, not to use drugs which will depress or fatigue the medullary centers—morphine, avertin, nembutal, evipal, etc. Paraldehyde or scopolamine may be used with relative safety. Large doses of depressing drugs, administered preoperatively render the patient uncoöperative and lower the b. p. dangerously.

Circulatory depression consequent to spinal anesthesia is largely the result of paralysis of the muscles of the thoracic cage, which exerts a diminished aspirating effect upon the blood stream. Weakening or paralyzing respiration interferes with the circulation of the blood in the coronary arteries and the oxygen tension therein. The sudden fall in b. p. causes a feeble heart action, which interferes with an adequate delivery of blood to the medullary centers. Respiration, therefore, becomes feeble and a greater degree of anoxemia develops.

Since temporary vasomotor paralysis invariably follows the introduction of an anesthetic solution into the spinal canal, it is essential that some drug be given to counteract the sudden lowering of vascular tension.

The average fall of b. p. following a spinal anesthetic is from 40 to 50 points systolic. This is a physiologic reaction and can best be met by the intravenous injection of from 200 to 300 c.c. of a 5 per cent solution of dextrose, to which has been added 2 or 3 minims of a 1:1000 solution of epinephrine. The venoclysis is begun as soon as the anesthetic is given, and is continued throughout the operation. The vasomotor palsy lasts 20 to 30 minutes, or until the anesthetic is fixed in the nerve tissue.

Pontocaine hydrochloride is instantly soluble, has less effect on b. p., gives a sustained anesthesia with a minimum of motor paralysis—is an ideal anesthetic for long operations.

A 1 per cent solution of neosynephrin is preferred to ephedrine, because it can be given repeatedly without cumulative effects or toxic reactions.

PERNICIOUS ANEMIA.—It is doubtful if a case has ever occurred in the full-blooded Negro.—*McCracken*, of Boston, in *Jl. Med. Assn. Ga.*

The Present Status of the Treatment of Pneumonia*

A Survey of the Literature

PAUL F. WHITAKER, M.D., F.A.C.P., Kinston

WHITLEY'S contribution in May, 1938, and subsequent articles along the same line, revolutionized the therapy of pneumococcal pneumonia. Large series of cases have been treated with the new chemotherapeutic agents, alone and in conjunction with serums, and the results reported. In the light of these experiences certain conclusions may now be drawn.

For convenience of discussion the treatment of pneumonia may be considered from three standpoints: first, that of chemotherapy; second, that of specific serum, and third, that of non-specific measures.

CHEMOTHERAPY

There remains little doubt that the introduction of sulfapyridine has been the greatest single advance made in the treatment of pneumonia. The mode of action of the drug is still a subject of intensive study. It seems plain that sulfapyridine has, not a bactericidal, but a bacteriostatic, effect, aiding the ordinary defences of the body in their battle against the invading organism. Although there is evidence that its potency is greater against certain strains and types than against others, it seems safe to assume that sulfapyridine is useful in all infections due to the pneumococcus.

In hospital and where suitable facilities are available it is good practice to delay therapy until sputum for typing and blood for cultures can be obtained. However, where these facilities are not available and the clinical picture is well defined, treatment should be begun without delay. The only contraindication to sulfapyridine is a history of previous sensitivity to the drug as manifested by one or more of its toxic reactions. In both broncho- and lobar pneumonia it is well whenever possible to determine the type of infecting organism.

When adequate treatment is given the temperature will fall to normal, the pulse and respirations will be slower and the appearance of the patient will improve within 24 hours in half the cases. In the remaining cases, while there is earlier evidence of improvement, the temperature will not reach normal for 48 or 72 hours, the fall being by lysis rather than crisis. Failure to obtain these results suggests: first (and most commonly), the case is not one of pneumococcal pneumonia; second, a complication may be present; third, dosage may be inadequate or absorption faulty; fourth, the disease

may be of the fulminating type, in which case other measures in addition to chemotherapy are indicated.

It is well to remember that sense of wellbeing does not parallel clinical improvement. This is due in large part to the depression caused by the drug, and it is only when the drug is discontinued that we may expect a return of appetite and contentment. However, the drug should not be discontinued too early, as recrudescence of the disease may occur.

The dosage of sulfapyridine has not been adequately determined. Neither has the length of time it should be given. An average dose by mouth for an adult is 2 Gm. (30 grains) initially, followed by 1 Gm. (15 grains) every four hours. For extremely ill patients the second dose may also be 2 Gm. and the drug may then be continued in 1-Gm. doses every four hours until the temperature, pulse and respiration have been essentially normal for a period of 72 hours. It is probable that specific immunity develops at the usual time in cases treated with sulfapyridine, and that the drug does not hasten the development of this immunity. This is rarely before the fifth, and may be after the tenth, day. Therefore, it is difficult to make a categorical statement as to how long the drug can be given. Where facilities are available for determining sulfapyridine concentration in the blood, this should be done from time to time. The consensus is that blood levels of the free drug between 3 and 6 mg. per 100 c.c. are adequate for therapeutic purposes. Infants and children tolerate the drug better than adults, and Hodes recommends that the total dose for 24 hours be calculated on the basis of 1 grain per pound for young infants, .8 grain per pound for older children. Less than 15 grains is seldom given, however small the child, and the dose usually does not exceed 60 to 70 grains (4 to 4.5 Gm.), however large the child. In hospital practice children are given immediately on admission two-thirds of the calculated dose for 24 hours, this followed by one-fourth of the calculated 24-hour dose every six hours. When the temperature has been normal for 36 hours the drug is discontinued, provided cultures from the nasopharynx are negative for pneumococci. If the pneumococci are still present, the drug is continued for two or three days longer and then withdrawn.

*Read by invitation before the Halifax County (N. C.) Medical Society, Nov. 8th, 1940.

Probably through faulty elimination, the elderly often build up extremely high blood levels on the usual dosage—a fact to be borne in mind. Also, while type-III pneumonia in the aged responds to sulfapyridine, it does so slowly, and it may be necessary to administer the drug over a long period of time in order to bring about resolution.

Here again caution is necessary.

While it would be ideal to have during the course of treatment reports on the concentration of the drug in the blood, it is obvious that thousands of cases must be treated without them. Under these circumstances Kneeland has suggested: first, giving the standard dose of 6 Gm. daily in every case, maintaining this dosage for four days; then halving the dose, giving 3 Gm. daily in six doses for three or four days more. If an obvious change for the better be not noted in 24 hours, question the diagnosis and look for complications. If nothing new is discovered, assume that the level of the drug in the blood is too low and increase the dose by 2 or 3 Gm. for a day or so. No increase in dosage should be made in the presence of toxic manifestations of the drug.

Though dangerous and fatal reactions are rare, the danger is real, and the patient should be observed carefully for early symptoms. Cyanosis is caused by alteration of the blood pigment and is to be practically disregarded. Cyanosis due to pneumonia is usually relieved by the administration of oxygen. Nausea and vomiting are frequent and are probably central in origin. If severe, proper measures should be instituted to control them. Alkalis are thought to be of value, while 1/150 grain of hyoscine followed by an occasional 1-grain dose of sodium luminal, both drugs by hypodermic, has proven satisfactory in some cases.

Sulfapyridine, like other members of the sulfonamide family, affects the bone marrow, which explains the occasional development of neutropenia. Hemolytic anemia with rapid fall in hemoglobin has occurred as a result of destructive action on the erythrocytes. Both of these complications have usually followed prolonged administration of the drug, though individual idiosyncrasy is probably the determining factor. Cessation of the drug and blood transfusion are indicated.

Drug fever and rashes, when they occur, usually develop after seven to ten days of therapy. Their diagnosis may prove difficult. Whenever suspected the drug should be discontinued.

Hematuria accompanied by renal colic, and even fatal suppression of the urine, has occurred. This complication appears to be due to the crystallizing of inactivated acetyl sulfapyridine in the renal tubules with resulting serious interference

with renal function. If this occurs, prompt cessation of the drug and adequate fluids and alkali are indicated.

It is good practice to regard any unexplained and unexpected event occurring during sulfapyridine therapy as due to the drug until it is proven otherwise. In addition it seems wise to do daily urinalyses and complete blood counts on patients under such treatment. Blood complications have been reported as late as 14 days after recovery, so a blood examination at the end of this period is indicated.

There has recently been introduced a soluble sodium salt of the drug suitable for intravenous use. Sodium sulfapyridine in a 5 per cent solution is usually given intravenously in the dose of 5 Gm. Care should be taken not to spill any of the solution under the skin, as it is highly alkaline and will cause sloughing.

Though most cases can be handled by the oral administration of the drug, an extremely ill patient may urgently need a maximum effect, a patient may not be able to take it by mouth, or a complicating pneumococcal meningitis may require a high blood level at once. In such cases intravenous administration in the recommended dosage seems to be justified.

Another new sulfonamide for the treatment of pneumonia is sulfathiazole. Flippin *et al.* treated a series of 152 patients with the new drug and 162 with sulfapyridine. From the first hundred cases in each series they drew their comparison. Of sulfathiazole an initial dose of 3 Gm. was given and repeated in four hours, then 1 Gm. every four hours, maintaining an average concentration in the blood of 5 mg. per 100 c.c. The treatment was continued until the temperature had remained normal for 48 hours, along with evidence of general improvement. The average total dose was 25 to 40 Gm. In a few instances they used intravenously a 5 per cent solution of sodium sulfathiazole (0.06 Gm. per kilogram of body weight). One intravenous dose was usually sufficient to raise the blood level of free sulfathiazole to 8 to 10 mg. per 100 c.c.

They concluded that the two drugs were equally effective in the treatment of pneumococcal pneumonia, and that the mortality and complications and the stay in the hospital were the same; although sulfathiazole brought the temperature down more rapidly, and nausea and vomiting and other toxic manifestations were much less frequent and severe in the sulfathiazole group. In the light of these reports it is safe to assume that sulfathiazole is established as a useful therapeutic agent in the management of pneumonia.

SERUM THERAPY

There is adequate proof that specific antipneumococcal serums are effective in reducing the mortality and bringing about rapid cures in the treatment of certain types of pneumococcal infection. Particularly is this true in types I, II, V, VII and VIII in adults and in type XIV in infants and children. The greatest advance in serum therapy has been in the introduction of rabbit serums, which are now available for all types of pneumococci from I to XXXIII inclusive, with the exception of types XXIV and XXX which are not generally accepted as specific types. These serums provide antibodies in much greater concentration, and, more important still, severe allergic reaction following their use is extremely rare.

There are four important points in the successful use of serum in pneumonia.

First is careful typing. The Neufeld method is simple and rapid and can be used on sputum or on exudates from mice after injection of the sputum. Careful bacteriologic control in typing will ensure the use of the proper type-specific serum.

Second, serum must be given intravenously, and, as in all serotherapy, certain precautions must be observed carefully. These include a meticulous history of previous allergic manifestations and previous serum therapy. Intradermal skin tests and ophthalmic tests should also be done in each case. The newer rabbit serums have reduced the incidence of allergic reactions.

Third, serum is most effective when used early in the disease.

Fourth, the dose of specific serum must be adequate. The proper dose must vary with the individual case, and good judgment is necessary to determine it. As a rule the smaller doses are sufficient in young individuals with negative blood cultures, early in the disease before complications have arisen. Usually in uncomplicated pneumonia of less than four days' duration and in patients under 30 years of age, 40,000 to 80,000 units of serum will precipitate a rapid crisis. In infants and children 10,000 to 30,000 units are often adequate. The dose is to be increased with age, and in cases when treatment has been delayed, or there is extensive involvement of the lungs. In patients with bacteremia, in patients who are pregnant, or in patients in whom purulent complications are suspected, the dose is doubled.

A dose of 100,000 units given within a period of two to four hours is considerably more effective than the same quantity divided into doses of 20,000 units and given one every six or eight hours. In severe bacteremia large doses are especially important, since a single dose of 200,000 units may bring about immediate recovery, whereas

500,000 units spread out over a period of three or four days may have no effect. With the serum now available it is possible to obtain good results if therapy is begun by the fifth day, and benefit is obtained even later. Mixed infections, errors in typing and the presence of complications obviously are productive of failure in serum therapy.

In summary it can be said that serums are now applicable in the treatment of approximately two-thirds of all cases of pneumococcal pneumonia. For such cases the death rate can be reduced by more than half in all cases and by more than two-thirds in those cases treated on or before the fifth day. In the treatment of type-III cases serum alone has not been highly successful, although striking responses have occurred in many cases before bacteremia develops.

NONSPECIFIC MEASURES

To an audience such as this it is hardly necessary to point out that in either serum therapy or chemotherapy other nonspecific measures in the management of the disease should be carried out as usual. Pneumonia patients will always require meticulous nursing care. Oxygen therapy will often be indicated and will be instituted when considered necessary by the physician. Adequate fluid intake and measures to combat abdominal distention, to control the acute mania that occasionally develops and prevent and control vasomotor collapse, and proper attention to diet and elimination will always be instituted promptly by the physician and the nurse when the occasion warrants.

CONCLUSIONS

From the reports of numerous observers over the past two and one-half years, these tentative conclusions may be drawn:

1. Chemotherapy with either sulfapyridine or sulfathiazole is the treatment of choice in the vast majority of cases of lobar pneumonia. It is certainly the treatment of choice by the practitioner in the field because of its convenience and because it renders unnecessary the costs, the hazards and the complications of serum therapy.

2. There are certain indications for serum therapy, either alone or in combination with chemotherapy: first, cases in which chemotherapy is contraindicated by reason of sensitivity to the drug; second, cases in which bacteremia is present; third, cases of the aged and severely toxic cases; fourth, cases occurring during pregnancy and the puerperium; fifth, cases in which there is no improvement after 24 hours of chemotherapy; and sixth, all type-III cases.

3. Regardless of what type of specific therapy is used, meticulous nursing and professional care, with institution of nonspecific measures when in-

dicated, will always be required.

4. When the effective measures now available have been completely adopted we may anticipate a reduction of at least 50 per cent in the mortality of pneumonia. The beginning realization of this hope and prediction constitutes one of the greatest accomplishments of medical science in many decades.

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MORPHINE BY VEIN AFTER OPERATION

(H. Neuhof, New York, in *Jl. Mt. Sinai Hosp.*, Mar.-April)

Morphine is the sovereign remedy for postoperative pain.

In order to obtain a more desirable and uniform action, the drug has been administered continuously in saline solution by vein after operations in which considerable pain could be anticipated. Adult patients usually receive a hypodermic dose of $\frac{1}{4}$ gr. morphine before operation. Normal saline sol. containing morphine sulph. is begun right after operation—for adults, per hour, $\frac{1}{16}$ th gr. of morphine sulphate in 100 c.c. of saline solution. If required as much as 150 c.c. per hour. As a precaution against error, the flask containing the morphine in saline solution is tagged with the patient's name. Usually the drug is continued for 24 to 36 hours, morphine $\frac{1}{4}$ to $\frac{1}{2}$ grs. being given.

There has been continuous and complete freedom from pain or discomfort as well as a state of wellbeing otherwise rarely seen after major operations. The absence of drowsiness has been surprising. There has been no retention of urine, distention, or difficulty with bowel movements referable to morphine.

Larger doses probably would be safe and smaller doses might suffice. Dosage for children is based on age.

RENAL INSUFFICIENCY FOLLOWING TRANSFUSION

(W. B. Daniels, et al, Washington, in *Jl. A. M. A.*, Mar. 22nd)

Among 13 patients with renal insufficiency following transfusion 6 recovered and 7 died. An immediate or delayed reaction occurred as a result of the transfusion and was followed by nausea, vomiting, hemoglobinuria, jaun-

dice, scanty urine, stupor and uremia.

Leukocytosis was present in all cases in which the leukocytes were counted. Of 6 cases in which the blood-grouping and cross-matching were rechecked the blood in 4 was shown to be incompatible. Of the remaining 2, in 1 warmed, hemolyzed, stored blood 8 days old was given.

Isohemolysis unaccompanied by isoagglutination was found in 2 cases. This accounted for the error in cross-matching and caused the hemolytic reaction.

More careful cross-matching of the blood of donor and recipient by the use of tube preparation incubated at 37.5 C. for one hour will prevent some of the errors and save lives.

Citrated plasma should probably replace whole blood in the treatment of secondary shock and hemorrhage.

Alkalis should be administered to all patients prior to transfusion.

The pathologic changes in the kidneys in 4 fatal cases consisted of interstitial edema, leukocytic infiltration, degeneration and necrosis of the tubular epithelium and the deposition in the renal tubules of granular pigment derived from hemoglobin. One case showed central, focal necrosis of the liver cells.

MODIFICATION OF THE USE OF TYPHOID VACCINE IN THE PRODUCTION OF HYPERTYREXIA

(J. Weinberg & H. Goldstein, Chicago, in *Ill. Med. Jl.*, Feb.)

At the Chicago State Hospital several factors influenced the choice of foreign protein as a means of production of hyperpyrexia. Many of the patients were colored and, hence, resistant to malaria; others were in poor physical condition so that malaria would have been dangerous. The single-dose method with typhoid bacilli was first instituted.

Desiring to obtain temperatures above 103°, various doses were experimented with by the trial-and-error method until a schedule of typhoid vaccine administration was used which has been successful in raising the t. above 103° in 85.43% of the 801 times it was used. If the temperature is 103° two hours after the first dose, the second dose should be modified. We have tried to induce hyperpyrexia in a group of 74.

1st day—	20 million bacilli followed by	50 million
2nd day—	30 " " "	100 "
3rd day—	50 " " "	175 "
4th day—	75 " " "	300 "
5th day—	125 " " "	450 "
6th day—	150 " " "	600 "
7th day—	175 " " "	800 "
8th day—	225 " " "	1000 "
9th day—	300 " " "	1500 "
10th day—	400 " " "	2000 "

In most instances, the fever was fairly well sustained. Temperature, p. and r. readings were taken every hour. No ill effects were noted. The most frequent complaint was headache which would be relieved by an ice bag. Chills usually within the first hour following the first dose.

The schedule was successful in raising the t. to 103° or above in 85.43% of the times it was used. The average temperature reached in this series of 74 patients was 103.90°.

RADIUM TREATMENT OF BIRTH MARKS

(J. E. Breed, Chicago, in *Miss. V. Med. Jl.*, Mar.)

Radium is our most valuable single agent in the treatment of angiomas. Careless use of radium may result in undesirable effects appearing months or years after radium treatment has been stopped. The best results are usually obtained in young children.

The Diagnosis and Management of Occiput-Posterior Positions*

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THE REASON for presentation of this discussion is not to add to the multiplicity of statistics on occiput posterior nor to submit any new method for the management of the condition. The frequency of its occurrence, the high fetal mortality and maternal morbidity, the frequency of late and erroneous diagnosis leading to poor end-results and the confusion of thought relative to this subject make it exceedingly important.

In 1888 Barton C. Hirst said: "If I were to be asked what one obstetrical difficulty in my experience had caused the most maternal and fetal deaths, what one had caused the most maternal and fetal accidents (not necessarily fatal accidents, however), often making the rest of life worthless or a tragedy, I think I would say occiput-posterior positions."

Paul T. Harper states that from the standpoint of frequency of occurrence, difficulties encountered and the responsibilities involved there is no condition more important than the occiput-posterior. Obstetrical authorities have been making similar statements for many years and yet occiput-posterior remains a major problem for the obstetrical specialist as well as for the practitioner—the man who has the management of the great majority of obstetrical cases.

There is considerable debate among obstetricians as to the cause of posterior positions. Variable statistics from different medical centers indicate difficulty in diagnosis. The various methods of management advocated indicate that no one method has proved generally efficacious.

INCIDENCE

The figures given for this position are: 11 per cent in a series in Sloane Hospital, 17 per cent in a Johns Hopkins series of 1687 cases, 25.1 per cent in Danforths, and 29 per cent in DeLees series. Williams places the frequency of left occipito-posterior to right occipito-posterior as one to five, and right occipito-posterior to right occipito-anterior as one to two. Pride, of Memphis Hospital, in an x-ray study of 700 primiparae at term reported 70.6 per cent. One finds it difficult to reconcile these figures with the findings obtained with the usual methods of examination and one

wonders if the x-ray interpretations are faulty. It is conceded by all to be the most common obstetric anomaly and responsible for a high fetal mortality and greater maternal injury than almost any other condition. The essential practical points are: first, the diagnosis of the presentation; second, the methods of dealing with it when it does arise. I think it well to mention that reliable statistics show that 85 per cent of posterior positions will rotate spontaneously, and of the remaining 15 per cent one-half will rotate if given sufficient time. Consequently, the procedure to be described in this paper is applicable in approximately 7½ per cent of the posterior positions.

PROGNOSIS

The prognosis of these cases depends almost entirely on the judgment and patience with which they are treated. The greatest virtue is patience. Undue haste to terminate a prolonged labor is the besetting sin, together with non-recognition of this condition, as a cause of the prolongation of the labor. This type of case forms the most common single cause of failure of attempts to deliver by forceps. In cases that rotate the prognosis for both mother and child should be but little influenced. It is in those that persist posterior that damage is done to both parties and naturally the fetus will suffer most.

In occiput-posterior positions labor is generally slower and longer because the occiput has to rotate through an arc of 135°—three-quarters of a half circle—while in anterior positions it rotates through an arc of only 45°—one-quarter of a half circle. Also, in occiput-posterior cases the pains are weak and irregular both as to time and strength. Early rupture of the bag of waters is frequent and, in general, things do not go smoothly. The head stays high up longer than in anterior positions and requires stronger pains to bring it down in the pelvis. Dilatation of the cervix is incomplete because the head does not fit well into the pelvis, does not press equally on the internal os all around, and spontaneous delivery requires great effort of the uterine and abdominal muscles.

DIAGNOSIS

The course of labor will very often suggest the presence of this condition. Diagnostic features of

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posterior positions are (1) delayed labor—the patient often goes a week or ten days overtime; (2) irregularity of pains—both as to time and force; (3) constant pain in the back and hips; and (4) premature rupture of the membranes.

On abdominal palpation the small parts are anterior, superficial and easily palpated; indeed the number of palpated parts may raise suspicion of multiple pregnancy. If we ask where movements are felt most the patient will say all over the abdomen. The back is felt to the right and posteriorly and difficult to palpate with the shoulder to the right of the median line. On palpating the head it is generally higher up in the pelvis and the forehead at first is plainly felt above the left ramus of the pubis, while on the opposite side there is more or less of a void. The heart tones are deep in the flank and further from the navel and also may be heard anteriorly to the left.

On vaginal examination the head is felt high up and usually partly deflexed. The cervix is not dilated as much as one would expect to find from the time that labor has been in progress. The small fontanelle to the right and posterior and higher up than, or at least on a level with, the large. In cases seen late after a caput has formed it is often difficult to distinguish the sutures and fontanelles and moulding may have so reduced the large that it may be mistaken for the small. In such cases the sure way to make a diagnosis is to palpate an ear.

MANAGEMENT

My first endeavor is to keep the gain in weight of patients down to twenty pounds or less during pregnancy. I cannot say how much this influences the weight of the baby but I do know that a woman 30 to 50 pounds overweight does not stand labor well. This is especially important in the prolonged labors one sees with the posterior positions. Too often the result is like that of an athlete going into competition in poor condition.

During active labor conservation of the patient's strength is always important. Avoid, if possible, early rupture of the membranes. The idea of bearing down and artificial rupture of the membranes to hasten delivery is wrong and serves only to prolong labor. Likewise, the giving of pituitrin is to be condemned. Danforth has well said that the proper management of occiput-posterior positions should begin with the first stage. On account of the frequently long-drawn-out first stage one should see that the patient gets plenty of rest. What we want is dilatation and rotation. For this purpose I still regard morphine as the most reliable drug that we have to relieve pain and produce relaxation. It is important for the patient to have adequate nourishment. This should be largely liquid non-residue

diet, for one should always keep in mind the probability of having to administer a general anesthetic. Milk soups and fruit juices given every two or three hours is a good rule. The importance of nourishment is evident as an aid in prevention of exhaustion and constriction ring of dystocia. If one will anticipate these long labors and insist on patients taking nourishment, exhaustion and acidosis, which Rudolph has demonstrated often to cause the formation of constriction ring, may be prevented.

No drug should be given during the second stage which interferes with the full coöperation of the patient, greatly needed for bringing the voluntary muscles into action and aiding greatly in moulding the head and forcing it down into mid pelvis or better still to the perineum. An exception may be made to this in case a patient becomes tired and no indications exist for early delivery. A full dose of morphine, giving an hour or two of ease and rest, will very often bring effective pains and a normal delivery.

While most cases will deliver spontaneously it is true that in any case the natural forces may fail and interference become necessary on account of exhaustion of the mother or distress of the baby. Which method of delivery is chosen will naturally depend upon the surroundings, assistance, personal ability and the degree of descent of the fetal head. For each case one must decide the most suitable means of attacking the problem and too much delay must not be allowed after there is complete dilatation and progress has stopped.

All are agreed that the second stage permitted to lag too long is dangerous to both mother and fetus, adding to the operative risk when interference becomes necessary. If the head is low in the pelvis or on the perineum forceps delivery is the method of choice. If, as is frequently the case, the head remains high and posterior some method of manual rotation must be resorted to. Instrumental rotation is advocated by many obstetricians and with this method brilliant results are often obtained. Bill has long been an advocate of the Scanlon maneuver. DeLee has devised a method of rotation with forceps which he calls the key-in-lock operation, but he warns against its use by any one not familiar with the technique and fully aware of its possible dangers. In my opinion forceps rotation is permissible only in the hands of an expert, and for a man of average experience manual rotation is much safer and more practicable. The indications for manual rotation are failure of the natural forces to effect rotation and delivery within a time considered safe to mother and child under the circumstances of the case. The conditions nec-

essary for rotation are—head in the pelvis or at least engaged, os fully dilated or easily dilatable, and complete surgical anesthesia for a brief time only.

I have found very useful the method of manual rotation recommended by Arnold. Briefly the technique is as follows: Standing or sitting in front of the patient with the left hand in supination rotate the palm outwards until the little finger is pointing upwards and thumb downwards toward the mother's right. In this attitude the hand is inserted into the vagina with the palmar surface of the fingers applied to the right side of the baby's head. There should be no attempt to grasp or hold the head with this hand. The fingers of the right hand are pressed firmly on the abdominal wall suprapubically until they come in contact with the left frontal region of the child's head. The functions of this external hand are to hold the head down and keep it from being pressed up by the internal hand, and by its lever-like action to aid the left hand in producing rotation. The two hands when thus properly placed hold the head firmly between them. Rotation is accomplished by the combined action of the two hands, the internal hand as it untwists making pressure directly against the side of the occiput crowding it forward while the brow is pressed downward and backward by the external hand. As the head is rotated an assistant makes manipulations through the abdominal wall with a view to swinging the child's body from the mother's right side to her left. The moving of the child's body by the assistant coincidentally with the rotation of the head greatly facilitates the latter process, and by thus avoiding the twisting of the child's neck removes the chief cause of the tendency of the head to return to the faulty position.

The depth of the head in the pelvis and the firmness with which it is sometimes impacted are not, as some have taught, contraindications for the use of this method. A pelvis that will permit the head in an occiput-posterior position to descend to the midplane or lower will permit this method of changing that position, and the lower the head the easier it is to rotate. Having rotated the occiput to one of the anterior positions and having moved the child's body likewise to an anterior position so as to maintain the head in its corrected relationship, the further conduct of the case may proceed according to circumstances and conditions. In the majority of cases it is better to apply forceps and complete the delivery before the patient awakens from the anesthetic, while in others the normal forces may be allowed to end the labor.

The unengaged occiput-posterior that has not

entered the inlet after reasonable trial of the normal forces is obviously not a case for this method of rotation. Manipulations on the unengaged head are not only of doubtful value but are usually sources of positive danger. Here postural rotation should always be given a trial, and in a good percentage of cases will effect engagement and rotation. Postural rotation consists in placing the patient well over on that side on which the back of the baby is located: if right occiput-posterior, then place the mother on her right side as far over on her abdomen as she can go with any degree of comfort. Of course she can not be kept so and it would do little good if she could, unless she be as completely relaxed as possible for one, two or more hours by a large enough dose of a reliable narcotic—morphine or dilaudin. Failing in this, version must be resorted to, but one should always keep in mind that version is often a deadly operation for a baby, as well as dangerous for the mother. Usually it is very difficult after the membranes have ruptured and most of the waters have escaped. Then the inside of the uterus soon moulds itself to the fetus making version extremely difficult and especially so in a dry uterus.

In closing I would like to emphasize that occiput-posterior positions remain a serious pathological obstetric problem provoking considerable confusion of thought; that early diagnosis, though difficult, is essential to best management; that no one method of management is applicable in every case; that for the physician who has had only the average training in obstetrics and who practices the latter along with other specialties in medicine, we believe that the better treatment of these posterior positions is the conservative, knowing that a very large percentage will rotate spontaneously, then when indicated interference may be resorted to according to the exigencies of the individual case. Even for the physician who has had considerable training and experience, we still believe the conservative treatment to be that of choice.

VITAMIN B₁ FOR ACUTE HEART FAILURE

(O. J. Morehead, Ritzville, Wash., in *Northwest Med.*, Feb.)

An acute, severe attack of dyspnea in an otherwise normal child $2\frac{1}{2}$ years of age was apparently relieved at once by 10 mg. thiamine hydrochloride solution hypodermically.

Since 22 months of age she had been subject to these attacks in increasing frequency and severity. At 26 months her tonsils had been removed but the attacks thereafter occurred more often and more severely.

Vitamin B₁ solution parenterally should be unhesitatingly tried in all cases of acute heart failure. Vitamin B complex or vitamin B₁ alone may well be used prophylactically before any severe operative ordeal such as tonsillectomy, particularly when there is evidence of cardiac weakness.

The Use of Encephalography in the Diagnosis of Subdural Hematoma*

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SUBDURAL HEMATOMA represents a clinical entity which, on account of its peculiar character, has only too often been overlooked and, in consequence, has fallen into the hands of the pathologist far too frequently. Subdural hematomata may simulate, and oftentimes their victims are paraded as examples of, cerebral thrombosis, cerebral arteriosclerosis or cerebral edema. It is conceded that there is a classical syndrome which indicates the presence of a subdural hematoma, but many such lesions produce symptoms and signs that vary widely in their clinical manifestations; in fact, one of the most striking characteristics of a subdural hematoma is the extreme variability of symptoms, and this fact in itself is a diagnostic point of the greatest value. Any combination of symptoms of general intracranial pressure or local pressure may be present in atypical, incomplete or fleeting variations. Often these patients are disoriented, irritable, and many forms of mental disease may be imitated. There is no other intracranial lesion so difficult to diagnose accurately upon the subjective and objective symptoms alone. Often a hematoma is encountered when least expected. It has frequently been said that appendicitis may simulate any disease of the abdomen; with equal truth it might be said that subdural hematoma may simulate any disease of the brain. Our inability to diagnose this lesion correctly is attested by the numerous negative surgical explorations on patients suspected of harboring a subdural hematoma. It was because of these useless cranial operations that we decided to use encephalography in an attempt to make more accurate diagnoses.

The introduction of air as a contrast medium into the spaces inside the skull which contain cerebrospinal fluid, for the roentgenographic localization of space-occupying lesions, has been extensively used since its introduction by Dandy in 1918. This diagnostic procedure, however, has not been advocated to any extent for the recognition of traumatic intracranial hematomata of sufficient size to warrant surgical removal. From July 1st, 1935, to July 1st, 1936, 1949 patients with evidence of head trauma were admitted to the Neurosurgical Service of the Kings County Hospital. Of this number, 659 had intracranial damage warranting hospitalization for two weeks or longer. In

56 of these cases the clinical evidence strongly suggesting a subdural or an epidural hematoma, encephalography was done. Twenty-two of these roentgenographic studies gave evidence of the presence of space-occupying lesions, which proved at operation to be hematomata. (There were eleven other patients who had subdural or epidural hematomata who were not subjected to air studies.) Eight of the 56 cases have been chosen to illustrate the value of encephalography in the differentiation of traumatic intracranial hematomata from the intracerebral lesions.

Illustrative Cases

Case 1.—Blow to the head. Bleeding from the nose and mouth. Alternate drowsy and restive state. Diagnosis of post-traumatic psychosis. Encephalogram. Operation. Right supranuclear facial paresis. Recovery.

A 32-year-old man was admitted to the hospital 15 days after being struck on the head with a section of lead pipe. Some hours following injury he was found at home bleeding from his nose and mouth complaining of severe headache. He was taken to a nearby hospital where a fracture in the right temporal region was verified by roentgen-ray examination. During the next two weeks he failed to show appreciable improvement, there being alternate periods of restiveness and drowsiness. Finally he became so unmanageable that he was transferred to the Kings County Hospital with a diagnosis of post-traumatic psychosis. On entry he was irritable when aroused but lapsed into a drowsy state when left alone. At times he would follow simple commands and answer loudly-spoken questions in a slurred manner. There was no external evidence of injury over any part of the head. The pupils were in midposition and both reacted sluggishly to light. The left pupil was slightly larger than the right. The optic fundi were within normal limits. No disturbance in the function of the cranial nerves could be demonstrated. The extremities were all used equally well and no gross changes in cutaneous sensation were present. The deep reflexes of the two sides were all present and equally active. Babinski's sign was not demonstrable. The abdominal reflexes were not obtained; the left cremasteric reflex was present, the right absent. He was observed for three days during which time he took sufficient food and fluids to maintain a metabolic equilibrium. Dehydration with caffeine and gastrointestinal purgation did not improve his mental state. At this time 130 c.c. of xanthochromic cerebrospinal fluid was removed fractionally and replaced with an equal quantity of air. The roentgenographic films showed two fracture lines traversing the left cranial vault, a marked displacement of the cerebral ventricular system to the right and absence of sulcus markings on the left side. (Fig. 1.)

Immediate operation was performed under local anesthesia. A bluish dura was exposed through a left midparietal opening. Upon incising the dura a thick membrane presented, which, being opened, revealed a completely liquefied subdural hematoma. This was removed by suction,

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the subdural cavity occupied by the hematoma irrigated and the wound closed with layer silk. While on the operating table the patient became more alert and capable of following commands. During the next two days he became completely oriented. On the third postoperative day it was noticed for the first time that a right supranuclear facial paresis was present, but no speech defect nor disparity of function of the upper extremities could be demonstrated. This right-sided facial paresis was not completely recovered from until the 12th postoperative day. The patient discharged from hospital asymptomatic, fourteen days following the operation.

Comment: This is a fair example of a patient with a traumatic subdural hematoma who presented as the main clinical feature of this lesion, an accelerated psychomotor state. Had his injury been more trivial, as frequently is the case, he may have been assigned to the psychiatric department as was requested by those in charge at the hospital from which he was transferred. In fact, there were no physical signs compatible with general brain injury and edema. Localizing the lesion with exactness enabled the operator to evacuate the liquefied hematoma by a relatively minor procedure.

Case 2.—Arteriosclerosis and arterial hypertension. Automobile accident. Ecchymosis about the right eye. Progressive right hemiplegia. Speech defect. Headache and drowsiness progressing to stupor. Encephalogram. Recovery.

A 77-year-old man was brought to the hospital because of a paralysis of both right extremities. Three weeks prior to entry he was knocked down by an automobile, dazed but not rendered unconscious. The right side of his face was contused and the right eye became black. He was taken to a nearby hospital but shortly after admission was permitted to go home. As far as could be determined, he had no complaints for the next two weeks, at the end of which time there was noticed slight slurring of his speech. Slowly he lost the use of the right extremities and was admitted to the Neurological Department with a complete aphasia and a right hemiplegia. During the first four days in the hospital, he became progressively more drowsy and accordingly was transferred to the Neurosurgical Department for air studies.

At this time the pulse was 120 per minute, rectal temperature 101.4 F., blood pressure 198/104. The pupils were small and both reacted to light. On several occasions the left pupil was noted to be larger than the right. The optic fundi showed moderate retinal vein engorgement, retinal artery sclerosis and blurring of both optic nerve heads along their nasal margins. The right lower face was paretic and a complete motor paralysis of the right side was demonstrable. The abdominal reflexes were not obtained on the right. The left cremasteric reflex was present but the right was not obtained. Hyperreflexia of the tendon responses was present and Babinski's sign was demonstrable on the right. Spinal puncture revealed a xanthochromic cerebrospinal fluid under a pressure of 24 mm. Hg. The urine contained a trace of albumin. The nitrogenous content of the blood was within normal limits. There was little, if any, change in his condition for the next three days when air studies were carried out. Fractionally 90 c.c. of cerebrospinal fluid was replaced by an equal quantity of air. The roentgenographic films showed a centrally placed but dilated cerebral ventricular system, the left lateral ventricle being dilated more than the right (Fig. 2).

At the time of the encephalogram the temperature was 101 and the pulse was 136. Immediately after the air studies there was no change in vital signs. Five hours later the pulse was 100, the temperature 100.2. During the next ten days the temperature remained at a level between 100 and 100.6, the pulse between 80 and 100. Slowly he became oriented and was discharged from the hospital 15 days following the air studies, with a weakness of the right arm and leg. Six months later the patient was able to walk and to use the right hand when eating.

Comment: The clinical record strongly suggests the presence of a subdural hematoma. The only feature against such a diagnosis was the appearance of the right hemiplegia, before the onset of drowsy state. Without air studies, one could have easily justified an exploratory operation which, 'tis true, may not have militated against his chances for recovery any more than the introduction of air into the cerebrospinal fluid spaces. This example illustrates a problem frequently encountered; namely, differentiation between a disturbance in function of the brain due to a primary vascular lesion and that resulting from compression by a traumatic hematoma. This differential diagnosis cannot be made with certainty from the history and physical signs alone.

Case 3.—Chronic right otorrhea. Arteriosclerosis. Acute alcoholism. Contusion of the occipital scalp. Ecchymosis about the left eye. Stupor. Bleeding from the nose and mouth. Spinal fluid contaminated with blood. Persistent headache and drowsiness. Encephalogram. Operation. Recovery.

A 51-year-old man was found in a subway station unconscious and bleeding from the nose and mouth. On admission to the hospital there was an odor of alcohol on his breath, profound stupor, a small area of contusion of the scalp in the midoccipital area and ecchymosis about the left eye. His relatives stated that the patient had had a purulent discharge from his right ear for ten years and for about one year prior to the accident they had noticed personality changes and poor memory. A limited neurological examination revealed absent superficial reflexes and impaired mental state. The spinal fluid was found to be under a pressure of 14 mm. Hg. and grossly contaminated with blood. Six hours after admission the patient could be aroused by strong cutaneous stimuli, but could give no account of events before the accident, and cooperated poorly. For the next two weeks he was partially disoriented, tended toward drowsiness, complained of right frontotemporal headache and had poor memory for recent events. Twelve days following entry, there was observed slight blurring of the nasal borders of the optic nerve heads. No disparity of function of the extremities nor changes in the deep reflexes could be demonstrated. The superficial reflexes were present on both sides.

An encephalogram was performed 14 days after admission, 28 c.c. of xanthochromic cerebrospinal fluid fractionally withdrawn and 34 c.c. of air introduced. The roentgenographic films revealed marked displacement of the ventricular system to the left side with dilatation of the left lateral ventricle (Fig. 3). There was no increase in the drowsiness, nor were there any remarkable changes in the temperature, the pulse or the blood pressure following the air studies. The encephalographic findings clearly indicated a lesion in the right temporal area; but, considering

the history of the memory defect, the chronic infection of the right ear and the recent trauma, one could not differentiate between tumor, abscess and hematoma. Five days after the air studies, preparation was made for a right lateral bone flap and a small incision along the inferior part of the posterior arm of the scratch mark for the bone flap. Upon making a burr opening at this site (over the posterior aspect of the right temporal lobe of the brain) bluish dura was exposed. The dura and an underlying membrane of a subdural hematoma were incised and approximately 60 c.c. of a liquid hematoma removed by suction. The subdural cavity was irrigated and the brain expanded within a few minutes. The wound was closed with layer silk.

Ten minutes following the operation the patient was alert and conversed intelligently. Convalescence was uneventful. Two weeks after operation, a second encephalogram was performed and 65 c.c. of clear cerebrospinal fluid was replaced by an equal quantity of air. The roentgenographic films showed a centrally placed ventricular system with moderate dilatation of the left lateral ventricle (Fig. 4). The patient was discharged from the hospital, asymptomatic, five days following the second encephalogram.

Comment: The history as obtained suggested that this patient had an intracranial lesion (abscess or tumor) at the time of the accident. The absence of the filling of the temporal horn of the right lateral ventricle also indicated a possible circumscribed lesion in this region; however, only a small amount of air had been introduced into the lumbar subarachnoid space and frequently the temporal horns of the lateral ventricle are not demonstrable when incomplete replacement of the cerebrospinal fluid with air has been carried out. In situations of this character, the operator should prepare the field so that any lesion that may be disclosed may be handled without further preparation and draping. This example illustrates the persistent dilatation of the lateral ventricle of the presumably unaffected left cerebral hemisphere; in fact, the postoperative air study shows (Fig. 4) an increase in the size of this ventricle as compared to the moderate dilatation demonstrated before the operation (Fig. 3).

Case 4.—Severe head injury. Right frontotemporal scalp contusions. Echymotic right eyelid. Coma. Dilated and fixed pupils. Bloody cerebrospinal fluid. Prolonged stupor. Encephalogram. Improvement.

An 8-year-old boy fell 30 feet and struck his head on a concrete step. He was brought to the hospital in a comatose condition from which he could not be aroused by strong cutaneous stimuli. There was a large zone of contusion and surface abrasion over the right frontotemporal area and the right eyelids were swollen. There was no evidence of bleeding from the nose, mouth or ears. The pupils were widely dilated, equal and non-reactive to light. Both eyes were directed downward and inward. The extremities were flaccid, cutaneous reflexes were not obtainable and the deep reflexes of the upper extremities were absent. The knee and ankle jerks were active and equal on the two sides. Babinski's sign was not present. The cerebrospinal fluid had a pressure of 6 mm. Hg. and was grossly contaminated with blood. Twenty-four hours after

admission, the patient had recovered sufficiently to move his extremities when painful stimuli were applied and at this time a weakness of the right extremities could be demonstrated. The pupils remained equal.

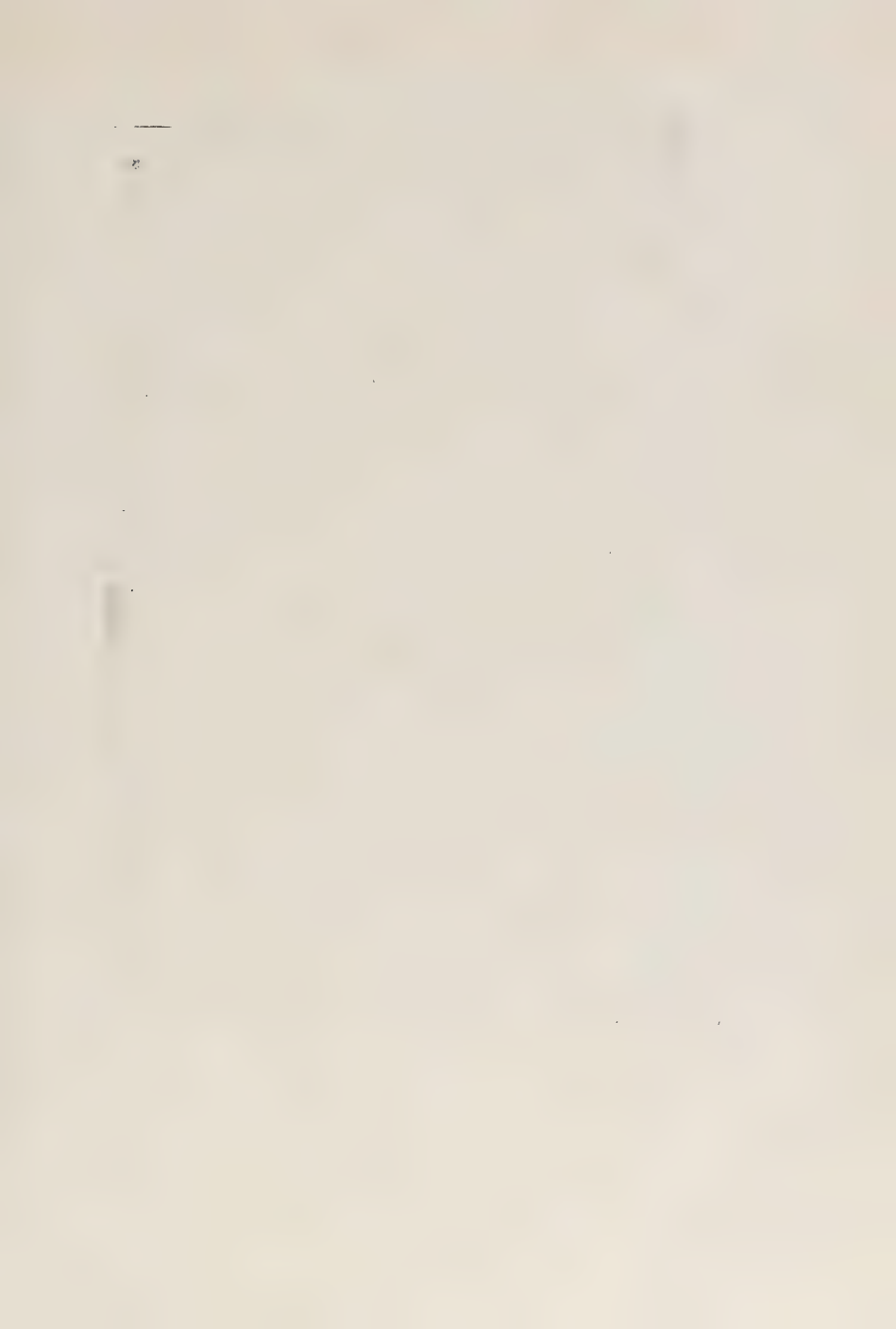
For the next ten days he was stuporous during which time fluid balance and general nutrition were maintained by lavage. Eleven days following entry, air studies were carried out, when 80 c.c. of xanthochromic cerebrospinal fluid was fractionally replaced by an equal quantity of air. The roentgenographic films showed a centrally placed ventricular system and sulcus markings that were considered to be within normal limits. On the day following the air studies the patient recognized his family. A disturbance of speech was demonstrable and there was a right hemiparesis. Recovery was slow but progressive during the next six weeks, and at the end of this time he was allowed out of bed. Eight weeks following the injury, he was discharged from the hospital with a mild right hemiparesis and a slight emissive speech defect.

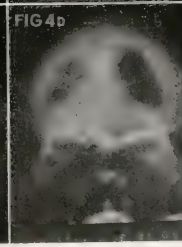
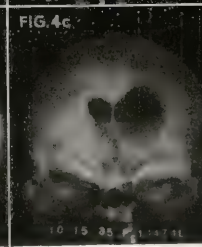
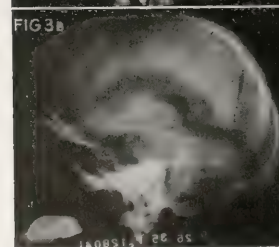
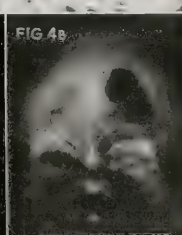
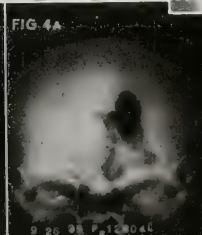
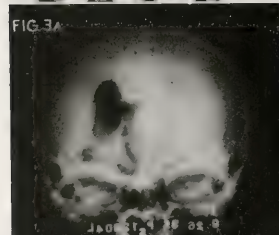
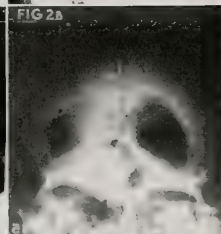
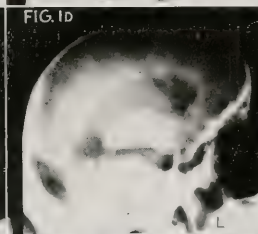
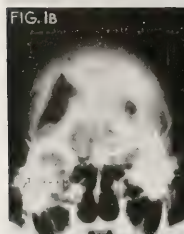
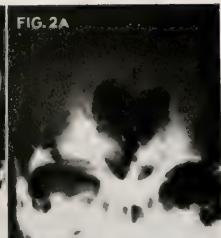
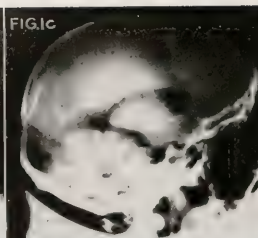
Comment: The clinical findings and the hospital course indicated a contusion-laceration of the left cerebral hemisphere; however, the prolonged stupor and the right hemiparesis suggested the possibility of a subdural hematoma of sufficient size to warrant surgical exploration. The air studies clearly excluded this possibility. The improvement in this patient's mental state within 24 hours following the encephalogram was too striking to be attributed to coincidence.

Case 5.—Acute alcoholism. Laceration left parietal scalp. Stupor. Bleeding from left ear and nose. Fracture of the skull. Erysipelas of face. Encephalogram. Operation. Subdural hematoma. Continued stupor. Secondary operation. Death.

A 40-year-old man was admitted to the hospital, semi-conscious, bleeding from the left ear and the nose, completely disoriented, resistive and with an alcoholic odor on his breath. There was a laceration 5 cm. long in the left parietal region which was surrounded by an extensive area of contusion. The pupils were small, round, equal and reacted to light. There was a weakness of the left face and left arm. The deep reflexes of the left extremities were quicker than those on the right side. The abdominal reflexes were not obtained. Babinski's sign was not demonstrable. The pulse was 70, the blood pressure 140/100. The cerebrospinal fluid was contaminated with blood and under a pressure of 19 mm. of Hg. The neurological findings remained the same until the third day following entry, when there was evidence of an infection involving the left side of the face and left ear. The temperature rose to 105.6 and after a febrile course of seven days the erysipeloid lesion subsided. At this time, it was noted that in the course of a few hours he would be alternately alert and drowsy.

Because of the recurrent drowsiness and the left hemiparesis, 14 days after admission 100 c.c. of xanthochromic cerebrospinal fluid was withdrawn fractionally and replaced by an equal amount of air. Roentgenographic studies revealed no air in the ventricular system, but showed an absence of cortical markings over the right cerebral hemisphere and a displacement of the falx cerebri to the left (Fig. 5). There findings were sufficient evidence to warrant the diagnosis of a right-sided space-occupying lesion, probably a subdural hematoma. Four hours following the air studies, operation was performed. Through a right temporal burr opening, a bluish discolored dura





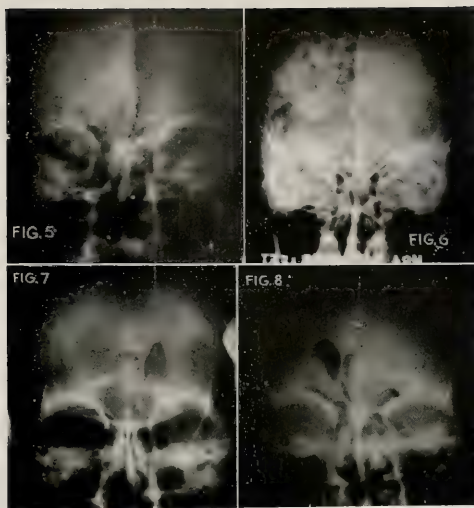


Figure I.—Roentgen films taken following encephalography in the anterior-posterior, posterior-anterior, right lateral and left lateral positions demonstrating the following:

- (A, B) A marked displacement of the cerebral ventricular system to the right.
- Absence of sulci markings on the left side.
- (C) Fracture of left cranial vault.
- Compression and downward displacement of the left lateral ventricle.
- (D) Normal right lateral ventricle.

Figure II.—(A, B) Encephalogram films taken in the anterior-posterior and posterior-anterior views which show a centrally placed, but dilated cerebral ventricular system, the left lateral ventricle being more dilated than the right.

Figure III.—Encephalograms taken in the (A) anterior-posterior and (B) left lateral views showing (A) marked displacement of the cerebral ventricular system to the left side with moderate dilatation of the left lateral ventricle and (B) absence of temporal horn filling on the right side.

Figure IV.—(A) Anterior-posterior and (B) posterior-anterior views of encephalograms down before; and (C) and (D) after operation. The preoperative views (A) and (B) show marked displacement of the cerebral ventricular system to the left with dilatation of the left lateral ventricle. The postoperative films (C) and (D) (lower views) show a centrally-placed cerebral ventricular system with further dilatation of the left lateral ventricle.

Figure V.—Roentgen film taken in the anterior-posterior view following attempt at encephalography shows the failure of the cerebral ventricular system to fill, absence of cortical markings over the right cerebral hemisphere and displacement of the falx cerebri to the left. At operation, the lesion proved to be a massive right subdural hematoma.

Figure VI.—Encephalogram taken in anterior-posterior position which shows absence of ventricular filling, deviation of the falx cerebri to the left and absent cerebral cortical markings on the right. Pathology proved to be a massive right subdural hematoma.

Figure VII.—An anterior-posterior view of roentgen film after encephalography which shows slight displacement of the cerebral ventricular system to the left.

Figure VIII.—An anterior-posterior view of an encephalogram showing marked displacement of the cerebral ventricular system from right to left. Pathology revealed at operation was right epidural hematoma.

was exposed and the underlying membrane of a subdural hematoma incised. After the removal of 60 c.c. of thick, tarry blood by suction the cerebral cortex was found to be 4 cm. below the dural surface. The wound was closed with layer silk. For the next 24 hours the patient was less drowsy than before operation, but over a three-day period he gradually lapsed into a stupor. At this time a cranial burr opening made in the left temporal region revealed no evidence of a subdural hematoma. The right temporal wound was then reopened and the cerebral cortex was found to be well below the dural surface. The wounds were closed with layer silk. Following this operation the patient's condition grew rapidly worse. The pulse and the temperature rose and he died twenty-four hours after the second operation. At autopsy, there was found extensive contusion and lacerations of the right temporal lobe of the brain. The entire right cerebral hemisphere was compressed as noted at operation, but there was no residual subdural fluid collection. An extensive fracture 9 cm. long was found, which traversed the floor of the left middle fossa.

Comment: This case illustrates the fact that it is at times difficult to replace the fluid of the ventricular system with air by the spinal route when there is a surface compression lesion of a cerebral hemisphere. In many of these instances, the falx cerebri is outlined by air and frequently the normal sulcus markings are not demonstrated on the side of the lesion. Recently, I was confronted for the third time with an encephalographic film which showed a shifting of the falx cerebri with absence of cortical markings on the side of the lesion, whereas, the cortical markings were normal on the opposite side (Fig. 6). In every instance in our experience where this finding has been encountered, the lesion has proved to be a space-occupying surface lesion, a subdural hematoma. A shift of the falx lateralizes the lesion but in instances where the falx is not outlined by air, absence of air-filled sulci on the one side along with clear marking on the other is presumptive lateralizing evidence. Another feature of this case is the fact that the brain failed to expand following the evacuation of the subdural hematoma. We have found this to occur in approximately 10 per cent of our cases.

Case 6.—Chronic alcoholism. Coma. Bleeding from nose and mouth. Contusion of right parietal scalp. Left facial paresis. Dilated right pupil. Encephalogram. Operation. Recovery.

A 45-year-old man fell down a flight of steps during an alcoholic debauch and sustained a contusion of the right parietooccipital region. He was admitted to the hospital shortly thereafter, in a deep stupor which had persisted since the time of the fall. There was a moderate amount of bleeding from the nose and mouth. The pupils were in midposition, the right larger than the left, both reacted to light. A left facial paresis of the supranuclear type was present but there was no demonstrable weakness of any extremity. The deep reflexes were all depressed, equally so on the two sides. Babinski's sign was not present. The abdominal reflexes were absent bilaterally. The cerebrospinal fluid was contaminated with blood and under

a pressure of 20 mm. Hg. Over a 24-hour period, the patient gradually recovered from his stupor and became able to answer simple questions intelligently. He complained of generalized headache and continuous nausea.

On the second day following entry, he became very restless and irritable when disturbed but drowsy when quiet. Air studies were carried out at this time and 50 c.c. of bloody cerebrospinal fluid was removed and replaced by an equal quantity of air. Roentgenographic studies revealed air in both lateral and third ventricles, but no air was present in the cerebral sulci. The cerebral ventricular system was found to be slightly displaced to the left with compression of the right lateral ventricle and slight dilatation of the left lateral ventricle (Fig. 7). These findings indicated a compression of the right cerebral hemisphere and the lesion was thought to be a subdural hematoma. Operation was postponed to allow time for the suspected blood clot to liquefy and so become more readily removable. Over a three-day period the patient became brighter and it seemed as though the injection of air had been of therapeutic value. Under local anesthesia, a faintly bluish, discolored dura was exposed through a burr opening in the right temporal region. When the dura was opened, only 4 to 5 c.c. of thick, black blood was found in the subdural space. This quantity of fluid blood was not sufficient to produce the shifting of the ventricular system as was demonstrated by encephalography. Following the operation, improvement was steady, and mental alertness and freedom from headache were regained in two days. On the third postoperative day, there were signs of bronchopneumonia of the right lungs but the febrile course was mild and the patient was permitted to be out of bed on the 14th postoperative day. He was discharged from the hospital, asymptomatic, four weeks following admission.

Comment: As is indicated here, a ventricular shift demonstrable by air studies in a patient who has recently sustained a head injury, may be due to intracerebral hemorrhage and edema. The absence of sulcus markings may have been due to a small amount of subdural blood on both sides. No doubt, a displacement of the cerebral ventricles of this degree frequently results from intracerebral edema secondary to trauma.

Case 7.—Fall from a horse. Contusion right parietal scalp. Stupor. Fracture in right parietal region of skull. Progressive left hemiparesis. Encephalogram. Operation. Right epidural hematoma. Recovery.

A 22-year-old man fell from a horse and struck his head against a curbstone. He was able to get up and walk 50 yards to the stable where he collapsed. Forty-five minutes following the injury, he was admitted to the hospital in a confused state, but was able to give his name and address. There was marked swelling and edema over the right side of the head extending posteriorly to the occiput, the site of a small abrasion. A second abrasion surrounded by slight swelling was also noted over the left frontal region. The pupils were in midposition, equal and responsive to light. No weakness of an extremity was demonstrable and the tendon reflexes were equally active on the two sides. The abdominal reflexes were absent bilaterally. Babinski's sign was not present. The pulse was 60 per minute. The cerebrospinal fluid was contaminated with blood and under a pressure of 36 mm. of Hg. There was evidence of a fracture of the right clavicle. Drowsiness developed and over a period of 20 hours there slowly appeared a left hemiparesis, more marked in the face and the upper extremity

than in the lower extremity. Babinski's sign was now demonstrable on the left side but the deep reflexes were equal bilaterally. The pupils remained equal in size.

The presence of a right epidural hematoma was suspected and air studies were performed 48 hours after the injury. At this time, 90 c.c. of cerebrospinal fluid was removed fractionally and replaced by an equal quantity of air. The roentgenographic studies revealed a fracture in the right parietal region of the skull crossing the grooves of the branches of the right middle meningeal artery. The cerebral ventricular system was displaced from right to left and there was compression of the right lateral ventricle with slight dilatation of the left lateral ventricle (Fig. 8). Following the making of the encephalogram, stupor became profound and the temperature rose from 100.6 to 102 per rectum. Two hours following the air injection, restlessness returned and the blood pressure rose to 170/120, pulse to 180. At operation, a large epidural clot was exposed, evacuated and hemostasis completed. When the operation had been completed, the temperature was 105.6, the pulse 180. Three hours later, the temperature had fallen to 101, the pulse rate to 120. Consciousness returned, the patient talked rationally and took fluids by mouth. Within two days, the weakness of the left upper extremity was recovered from, but the left face weakness persisted for six days, postoperatively. The patient was discharged from the hospital, asymptomatic, four weeks following entry.

Comment: This story clearly indicates that there is great danger of precipitating a marked increase in symptoms and signs (in fact, death may result), by altering the existing intracranial tension when there is a rapidly-expanding lesion present. This patient should not have had air studies performed. However, the signs resulting from the presence of an epidural hematoma are frequently masked by general brain damage, and in many hospitals more epidural hematomata are disclosed on the autopsy table than in the operating room. On this basis, whenever there is a suspicion of an intracranial blood clot, it is better to localize the lesion by air studies followed by indicated surgical procedure, than to perform blind exploratory operations. Where a localizable epidural hematoma is suspected, it is advisable to make a ventriculogram rather than to introduce air into the lumbar thecal sac.

Case 8.—Blow to left temporal region of head. Short period of unconsciousness. Vomiting, headache and drowsiness. Right hemiparesis. Encephalogram. Brain contusion-laceration. Recovery.

A 38-year-old man was struck in the left temporal region with a hardwood stick which produced immediate unconsciousness lasting for an hour. Upon regaining consciousness, he vomited frequently for 24 hours and was brought to the hospital complaining of severe left fronto-temporal headache which had persisted since the injury. On admission, he showed alternate periods of drowsiness and restiveness but was able to cooperate and to answer questions intelligently. There was an extensive contusion over the left frontal region surrounded by a zone of edema. The pupils were equal and reacted to light and accommodation. The neurological examination disclosed no abnormal signs. The cerebrospinal fluid was slightly tinged with

blood and was under a pressure of 28 mm. Hg.

Twelve hours after admission and 28 hours after the injury, the patient was still very drowsy and complaining of a severe left frontal headache. His pulse, which was 120 on admission, had slowed to 60. Extensive subcutaneous ecchymosis appeared both anteriorly and posteriorly to the left ear. At this time, the presence of a right hemiparesis was first observed, was most severe in the right face and the right upper extremity. The deep reflexes still remained equally active on the two sides but an equivocal Babinski's sign was demonstrable on the right. The abdominal reflexes, present on admission, were now absent bilaterally. The pupils remained equal. Because of this clinical course, an intracranial hematoma was suspected and air studies were carried out, 52 hours after the injury. At this time, 102 c.c. of cerebrospinal fluid contaminated with blood was fractionally removed and replaced by an equal quantity of air. The roentgenographic films showed an extensive vault fracture crossing the course of the left middle meningeal artery. There was slight, if any, displacement of the cerebral ventricular system. There was no untoward sign or symptom following the air injection. Twenty-four hours later, the patient was more alert and his headache was much less. Over a period of four days, the headache gradually disappeared and the right hemiparesis steadily improved. Fifteen days after admission, the patient signed his release from the hospital, at which time he was free of headache and the left-face and left-arm weakness was very slight.

Comment: Here again we have the classical story of an epidural hematoma. Without air studies, surgical exploration would have been indicated. By comparing case 7, which ran a very similar clinical course, one can appreciate the difference in the possible reaction which may occur following encephalography. One must be prepared to carry out a surgical procedure immediately after the air studies if operation is indicated.

SUMMARY

1. The clinical picture of subdural hematoma is varied, atypical and may simulate almost any cerebral disease. Oftentimes it is impossible to make the diagnosis on the history and the physical findings. In such case air studies clearly localize the lesion.

2. Illustrative case histories have been cited to demonstrate the value of encephalography in the diagnosis of subdural hematoma.

3. It is to be remembered that encephalography is not without risk and not infrequently untoward effects are produced by air studies which necessitate immediate operation. Therefore it should be strongly emphasized that patients subjected to encephalography should be prepared for surgery immediately after interpretation of the roentgen films.

—Medical Arts Building.

DISCUSSION

DR. ADDISON BRENZER, Charlotte:

I am doing exactly what my wife told me not to do that is have anything to say at this meeting.

I am prompted to say something for two reasons:

One, to commend Dr. Pitts on his paper and to remark that his encephalography is almost too good to be true. The ventricles are so well outlined that I should say that the air had first been injected into the ventricles, to pass by the foramina of Monro to the third ventricle, through the aqueduct of Sylvius to the fourth ventricle and thence through the foramina of Magendie and Retzius over the spaces of the arachnoid. It is true, that the ventricles can be filled by withdrawing 150 c.c. of fluid by lumbar puncture and then air be injected in the reverse order through the arachnoid into the ventricles by lumbar puncture. But usually, the ventricles are not so well defined.

However, the pictures are well defined for encephalography, and the paper has been well given, in proving the presence of a subdural hematoma. My second reason for talking is prompted by the presence of Dr. Barker. I am startled to be minded of the fact that Dr. Barker taught me medicine thirty-six years ago, and he was grown-up at the time he did it. He looks as well and vigorous as he ever did. You would think he were my junior, wouldn't you?

DR. P. B. PARSONS, Charlotte:

I have very little to add to the paper or to the discussion you have just heard. I would like to say that the plain plate often gives a very important point in the diagnosis of these cases and may do away with air injections because the pineal body is often picked up displaced to one side or the other from the midline. Occasionally, in the presence of large hematoma or mass, the plain film will show some increase in density on the affected side or the presence of a fracture line.

I'd like to mention ventriculography versus encephalography. I believe a case should be gone into very carefully before attempting a spinal puncture because of the danger of spinal puncture in increased intracranial pressure.

There is one other method of diagnosis in these cases or any other case of intracranial lesion and that is the administration of opaque material into the arterial system. The technic is very difficult and is not in general usage. It consists of the injection of thorotrast into the carotid artery with films taken immediately following. The normal side must be viewed as well as the abnormal so that the various positions of the major vessels can be contrasted.

As far as the roentgen diagnosis is concerned, after the placing of the air in the ventricular system, the method of diagnosis is the same as that used in the diagnosis of any other intracranial lesion. This is done by visualizing the displacement of the ventricles and by noting any defects in them.

DR. HOWARD MASTERS Richmond: I certainly want to thank Dr. Pitts for his very excellent discussion and his encephalographic slides. I feel that whenever we have a head injury and within a few days progressive signs of increased intracranial pressure and a little later on nerve involvement, we must use our diagnostic procedures, though do so cautiously. Now in some of these cases the onset of progressive symptoms comes rather soon, within several days to several weeks. In others there are only slight changes, such as in personality, and these may persist for many months before the real effect of the subdural hemorrhage is apparent. I'd like to mention a case of that nature.

A woman in her early fifties fell on the ice and struck the back of her head, was unconscious for an hour or two but in a few days was up again and no particular signs were then noted. In several months it was observed that

she was not as alert as previously. In about eighteen months she began to lose her appetite and to talk less. At the end of two years she was sent in to the hospital as a psychotic patient, refusing to eat and refusing to talk. On examination we found this patient almost in a state of amnesia. In the course of three weeks she said two or three words. She followed individuals around the room with her eyes in an inquiring manner just as an infant of three or four months might do. When given objects, she would not always know what to do with them and on neurological examination she had nothing but a babinski sign on the right side. She was awkward in her movements and in her gait. Encephalography revealed very interesting things. On the right side the ventricle was enlarged and pushed to the left; the left was about normal in size but also pushed to the left. In other words, there was a compression of the right hemisphere of 50% or more and evidence of pressure to the left. It was not a pure atrophy of the brain, but we had a compression of the brain with pressure to the left. On operation the hematoma had become a cyst. It was evacuated and after three months the patient began to show definite improvement.

We see minor cases of head injury, just ordinary simple concussion types who may go for several days without headache or other symptoms and then have progressive headache for a few weeks. Lumbar puncture may not reveal any evidence of blood. Frequently relief from test puncture and some dehydration may be sufficient to clear up that type of case without other procedure.

DR. PARSONS: I'd like to say that when I brought the point up in reference to filling the ventricles, they will fill equally well by either method (Encephalography or Ventriculography). My point was that indiscriminate spinal puncture in cases of increased intracranial pressure might well give rise to untoward symptoms and should not be attempted casually.

DR. PIRTS (closing): Mr. Chairman, I want to thank Doctors Brenizer, Masters and Parsons for their discussion and comments.

Ventriculography consists of placing burr holes in the parieto-occipital regions and injecting air directly into the lateral ventricles of the brain and thereby filling the ventricular system. Usually by this procedure one does not inject enough air to force it out through the foramina of Magendie and Luschka into the cerebral subarachnoid spaces. That is ventriculography, and it is used chiefly in localizing brain tumors or any other space-occupying lesion of standing long enough to cause papilledema.

Encephalography consists of replacing the cerebrospinal fluid with air by means of withdrawing the fluid and injecting the air by the lumbar route. This procedure should not be used in the presence of papilledema. With ventriculography one can outline the lateral ventricles, the third ventricle and the fourth ventricle and with encephalography one also demonstrates the surface cortical marking of the cerebral subarachnoid space. All the slides I have shown you were encephalographic films. Put several of them on the screen, please.

In ventriculography, one must, of necessity, make burr holes in the back of the head to inject air directly into the ventricles. This air was all injected through the lumbar route. On no slide do you see a burr opening left by the making of a ventriculogram.

(SLIDE) You can see no burr holes whatsoever. If it had been ventriculography, the bone would have a burr hole here and here and here (indicating). These ventricles were all filled by air injected via the lumbar route.

Postoperative Distention*

IRWIN GRIER LINTON, M.D., Charleston

DISTENTION of the intestines, of the urinary bladder, or of both, after operation, is of as painful interest to the patient as it is of scientific concern to the surgeon. Sleepless nights of watching and trying to relieve patients whose abdomens were balloon-like stimulated my interest in the subject during a junior internship in 1932. Why one patient should have a smooth post-operative course and another should have a stormy one was a question to which there seemed to be no answer.

The answer, if found, is a many-sided one. The general condition of the patient; the size of the incision necessary for performing the operation; the handling of tissues and especially the intestines, are some of the influencing factors. The depth, length and type of the anesthesia also play a part. Proper preoperative and postoperative care are of importance in preventing postoperative distention.

However, of the many factors which influence distention, only the use of prostigmin methylsulfate will be discussed in this report.

This drug was first synthesized in 1931. It is commonly referred to as a cholinergic, and, in the older nomenclature, a vagotonic drug. Unlike eserine, its homologue in nature, prostigmin, in therapeutically effective doses does not give rise to disturbances of the eye or of the circulatory and respiratory systems, nor has it a toxic irritating influence on the spinal cord and brain. By blocking the acetylcholine-destructive action of cholinesterase, prostigmin maintains and restores normal impulse conduction. One of the theories explaining the action of prostigmin is that it blocks the activity of cholinesterase and thus permits acetylcholine to perform its normal physiologic function of carrying the impulse across the synapses and myoneural junctions of the parasympathetic system, as well as the preganglionic junctions of the sympathetic system.

The first series of patients to be here reported were operated on from July, 1935, to July, 1936. In all of these cases prostigmin was given preoperatively and postoperatively in an effort to prevent the development of distention. The manufacturer kindly supplied the necessary medicine for this study. The 104 cases were all gynecological laparotomies performed by the writer. The con-

trols were patients operated upon by the chiefs of the gynecological service, which gave the control group the advantage of experienced operators.

The schedule for giving the drug was simple. For twenty-four hours before operation, 1 c.c. of 1-4000 solution of prostigmin methylsulfate was injected every six hours. Following operation, 1 c.c. of the same solution was given every five hours and continued for thirty-six to seventy-two hours, depending on the individual case.

There were 104 treated cases, and in 90 there was no distention. In 11 cases slight to moderate distention occurred, and in these the 1-2000 solution of prostigmin, rectal tube, et cetera, afforded relief. Only three of this series, and they were difficult cases, required gastric suction in addition to the prostigmin. There were no deaths in this series.

These patients were generally brighter and more comfortable, but a few complained of pain from the peristaltic action produced by the injections. It is difficult in the average case to say that one patient is distended, and that another is not. However, with the control in the bed beside the treated case, it is easier to get a reliable impression. This series was convincing as to the beneficial effects of the pre- and postoperative therapy, especially in cases which presented any technical difficulty.

It is regretted that no figures were kept, but the observation was made at the time of the study that very few of the treated cases required catheterization. This feature of the drug had not, to our knowledge, been reported at that time, and we missed a scoop by not publishing it. Since then, this effect of the drug has been used to advantage in cases in which difficulty in voiding developed after operation.

The ordeal of being catheterized many remember as the most painful experience incident to an operation, and urinary-tract infection by catheterization is a constant danger. Consequently, the beneficial effect of prostigmin on the patient who is unable to void is felt to be of prime importance.

By careful operative technique, careful selection of the anesthetic agent and adequate postoperative rest of the gastrointestinal tract, distention of this system can usually be prevented. On the other hand, postoperative urinary difficulty often looms up unexpectedly.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

Of 25 private patients who were unable to void following abdominal operation, only three (12%) required catheterization after the use of prostigmin. These were cases in which no prostigmin had been given before operation, and the postoperative injections were made after bladder distention had begun and the usual methods used to stimulate voiding had failed.

This action of prostigmin has been used to advantage in obstetrical cases also. As a result of long or difficult labor, or for no obvious reason, a few women are unable to void after delivery. In these, this drug is of value. Of seven obstetrical patients who were unable to void following delivery, four were given two injections of 1-2000 solution of prostigmin and were able to void; in one, three injections were required; and in one, catheterization was necessary. In this last case, the bladder was distended before the drug was started and delay in relieving the pressure was not thought to be wise; so resort was had to catheterization.

One case in this group will be reported briefly because of the relief given, this the first of the writer's patients to be given prostigmin for bladder distention.

This patient was delivered of her first baby, a 9-pound boy, in 1936, on the West Coast, when she had to be catheterized for 18 days postpartum before she was able to void spontaneously. I delivered her second child, an 8½-pound girl, in 1939. She had nembutal as an analgesic, and the delivery was performed under nitrous oxide-oxygen anesthesia, by episiotomy and low forceps after manual rotation of the head. Following delivery, she was unable to void after all of the usual tricks had been tried; so the catheter was used. Remembering the postoperative effect on the bladder observed in the series just reported, prostigmin 1-2000 solution was given every three hours, and there was no further urinary difficulty.

On the strength of the results in these cases it is now routine procedure to give prostigmin if the patient even threatens to have difficulty in voiding. The method of administration is simple and safe. One ampule of 1 c.c. of the 1-2000 solution is given as soon as difficulty arises or can be anticipated. In many patients this in conjunction with local maneuvers is sufficient. If the patient does not void in 45 to 60 minutes the content of another ampule is given. In some cases catheterization will be necessary because distention of the bladder has become extreme. However, by giving the drug every three to four hours for 24 hours or more, repetition of catheterization is usually obviated.

It has been found that good results may be expected from the giving of prostigmin every three hours for a few doses until there is satisfactory emptying of the bladder; then lengthening the time between injections to four, five or six hours.

CONCLUSIONS

The following conclusions have been reached as a result of this study of 104 consecutive gynecological laparotomies, and operations upon or deliveries of selected private patients since 1935.

Pre- and postoperative prophylactic use of prostigmin 1-4000 decreases postoperative intestinal distention and enables the patient to void earlier, eliminating the necessity for catheterization in most cases.

Postoperative use of prostigmin 1-2000 solution is of value in maintaining the muscular tone of intestines and bladder when it is feared distention may develop.

The therapeutic use of prostigmin is of great value in overcoming already-developed intestinal distention.

Finally, the use of prostigmin in obstetrical and surgical patients who are unable to void is justified, in that it will usually obviate all need for catheterization.

DISCUSSION

DR. CHARLES STANLEY WHITE, Washington: Members of the Tri-State Society: Whether you are the operated-on or the operator, this is a question of considerable importance. I do not know which is more important. Any drug which will reduce the amount of distention and the necessity for catheterization is an important one. Dr. Linton's figures show that he has accomplished something. A few years ago an intern in Washington became interested in this. He later went to New York and recently published an article on this condition bearing out very much as Dr. Linton has just said, that 75 per cent of all major operations are followed by distention. This distention is difficult to measure in centimeters or in any other way. After the use of prostigmin preoperatively as well as postoperatively—we feel that preoperative use is just as important as postoperative use—the best results are obtained from the combination of the two. If you can reduce the amount of distention, you have perhaps saved the patient some damage to the musculature of the bowels, possibly some permanent damage. If you can prevent the necessity for catheterization, you may have saved him from infection. You have made the patient more comfortable. You have reduced the mortality and the morbidity.

Prostigmin will not take the place of proper preparation of patients. Sometimes patients are sent in late at night before the operation, or even on the day of operation. That is a pernicious practice. It is done for economic reasons on occasions but it is certainly not to the interest of the patient to be operated on a few hours after admission. A patient should be admitted the day before. Food elimination and the proper mental state contribute to good convalescence. I do not think prostigmin or any other drug can take the place of those things. Bad anesthesia, bad preparation of the patient and sometimes inaptitude of the operator, are all factors to take into consideration when we talk about reducing postoperative distention. No single drug will take the place of good surgery.

DR. GEORGE DAWSON, Charleston: Mr. President, Members of the Tri-State Medical Association: I appreciate this paper greatly. We do run into postoperative disten-

Some Underlying Factors in Edema and Their Clinical Implications

WILLIAM H. HIGGINS, M. D., Richmond

ONE OF THE difficult problems in the practice of medicine is an understanding of the physiologic background of many of our clinical observations. Medicine has made such unprecedented advances in laboratory procedures that there is often a lag between the establishment of a scientific fact and its application to the treatment of the patient. Unless there is brought out from time to time a correlation of this newer knowledge with our clinical problems much will be lost in the satisfaction as well as the value of applying these principles in our daily routine. The subject of edema is illustrative of this point.

Water normally constitutes about 70 per cent of the weight of the body. The quantitative relationship between the great fluid compartment of the body and the chief avenues of water absorption and excretion make an impressive figure. Maintenance of a normal volume of fluid in the vascular compartment is much more important than in the interstitial space. Consequently an increase in volume of the extracellular fluid constituting a state of edema is usually accomplished entirely by expansion of the interstitial space; on the other hand loss of plasma water as a result of dehydration is usually made up by the passage of interstitial fluid into the vascular compartment.

The avenues of intake and elimination of water are now well established and require no elaboration. Water is supplied to the body by ingestion of liquids and solids. The normal quantitative turnover of water in the individual is enormous, reaching at times to 16,000 c.c. in a period of 24 hours; much of which is due to secretion and reabsorption. According to Landis, the total area of capillary endothelium in the adult individual may be visualized as a microscopically thin membrane three feet wide and more than four miles long. This enormous filtration surface obviously facilitates the extremely rapid interchange of fluid between the vascular and the interstitial fluid compartments.

FACTORS CONCERNED IN EDEMA FORMATION

The normal interchange of fluid between the vascular compartment and tissue spaces depends largely upon four factors:

- (1) The capillary blood pressure
- (2) The colloid osmotic pressure of the blood plasma

- (3) The relative impermeability of the capillary wall to protein and its free permeability to water and most electrolytes
- (4) The lymphatic circulation.

Due to one or more of these factors edema develops.

(1) *The Capillary Blood Pressure.*—It has been estimated that the average pressure at the arterial end of the capillary is 35, at the venous end 13, mm. of mercury. Under average normal conditions the balance between the opposing forces of capillary blood pressure and colloid osmotic pressure exerted by the plasma proteins (average 25 mm. Hg.) is such that the former exceeds the latter at the arteriolar end of the capillary, and the latter exceeds the former at the venous end. As a result of this pressure gradient, the passage of fluid toward the interstitial compartment is favored in the arteriolar portion of the capillary and toward the vascular compartment in the venous portion.

Abnormal increases in capillary blood pressure capable of producing edema may result from—

- (a) Increased venous pressure
- (b) Arteriolar dilatation.

Increased capillary pressure due to arteriolar increased capillary pressure, has been generally regarded as one of the most important factors involved in the production of edema in congestive heart failure. This increase is dependent upon a number of factors. Among these factors are venous stasis and increased intrapleural pressure due to hyperpnea and to pulmonary congestion.

Increased capillary pressure due to arteriolar vasodilatation is seldom responsible for edema; however, mild edema may result in hot weather. Placing the hand in warm water may bring about sufficient dilatation to cause swelling. Sometimes in a hemiplegic edema develops as a result of the vasodilatation secondary to nerve damage.

(2) *Colloid Osmotic Pressure of Plasma.*—The important part played by hypoproteinemia with consequent decrease in the colloid osmotic pressure of plasma in the pathogenesis of edema is now well established. It is stated that edema develops when the plasma protein concentration falls below 5 Gm. per 100 c.c. and the albumin concentration below 2 Gm. The plasma albumin is much more important than globulin in this connection because of

the smaller size of its molecule. These proteins have been more recently subdivided into a number of smaller fractions and some doubt has been cast on the specificity of a reversal of the albumin-globulin ratio in isolated instances, but its practical application to the average case is still of value.

Hypoproteinemia may result from malnutrition, or excessive loss of protein from the body. It also is a common manifestation of certain types of renal disease; e.g., nephrotic syndrome and some forms of chronic nephritis. The phenomenon is generally attributed to loss of protein in the urine or inadequate protein intake. The role of the proteins in the maintenance of the osmotic pressure of the circulating blood is well established. Chronic protein deficiency leads to edema and a tendency to circulatory collapse. In conditions associated with protein loss, such as in pleural and peritoneal exudates requiring repeated taps, particular effort should be made to reestablish the normal protein content by means of an adequate diet. Closely related to this deficiency state is the so-called beri-beri heart, produced by a lack of vitamin B and frequently found in chronic alcoholics. There is a marked dilatation of the right ventricle, with dyspnea, edema and general weakness.

This syndrome is not due to the effect of alcohol *per se*, but is the result of an unbalanced diet arising from the chronic use of this beverage. It has been shown that the signs of beri beri in alcoholics can be relieved by supplying the proper vitamins without withholding the alcohol.

In this connection edema sometimes appears as an annoying complication following a variety of surgical procedures. The factor of dietary protein restriction is of fundamental importance. Up to a certain stage the nutritional values, the deficiency of protein in the diet, can be made up by increasing the intake of carbohydrates; but there comes a time when, as a result of protein restriction, tissue wastage occurs regardless of the intake of carbohydrates and fat. As the plasma-protein concentration is reduced the circulating fluid begins to leave the vessels, and we have first a latent, and later an evident, tissue edema. This point acquires particular clinical significance in patients with chronic gastrointestinal disturbances who are frequently victims of protein undernutrition before and after operation. To this handicap is often added the excessive administration, post-operatively, of fluid and salt solution, with often a resulting edema. Such edema necessarily interferes with the healing of wounds and impairs the function of certain vital organs.

It is understood that not infrequently the newly provided stoma following gastroenterostomy may become so edematous as to prevent normal empty-

ing of the stomach. According to Ravdin gastric resection and anastomosis can not be performed without causing edema at the site of operation. In delayed emptying it is believed by him that the continued edema is more frequently responsible for failure of the stomach to empty after operation of the Billroth, type one or type two, than are any technical defects of the anastomosis. In cases of this type studied at the Massachusetts General Hospital by Jones and Eaton, it was shown that as a rule the patients came to operation because of some gastrointestinal lesion and, with the further postoperative restrictions imposed by the nature of the operation, edema developed. The use of normal saline solution in these patients further augmented the swelling.

The following case history is illustrative of this point:

A 67-year-old white woman entered St. Elizabeth's Hospital on March 14th, 1940, with a diagnosis of multilocular pseudomucinous cystadenoma of the right ovary. At operation a 63-pound cyst containing more than four gallons of fluid was removed. From the beginning, nausea and vomiting were prominent features, necessitating the frequent intravenous use of dextrose solution. During the course of her prolonged postoperative convalescence evidences of intestinal obstruction appeared, for which a tube gastrostomy and two enterostomies were made, which added to her digestive difficulties. A generalized edema developed at which time her globulin was 2.6, her albumin 1.8. Special protein mixtures were introduced and within three or four days her swelling disappeared although her condition otherwise was stationary and she made a satisfactory recovery.

There has been much speculation concerning the cause of hypoproteinemia and edema in normal pregnancy. Hydremia or plasma dilution resulting from increased plasma volume has been regarded as an important factor. Recent studies by Melnick and Cowgill throw light upon this problem. They showed experimentally that the pregnant animal has a very limited reserve of plasma protein, and a greatly impaired power for regenerating plasma protein. They conclude that the synthesis of body proteins in the fetus during pregnancy and the milk proteins during lactation are actually an internal plasmaphoresis leading to a depletion of the materials from which this complex is made. These parasitic effects on the maternal organism are believed to be of primary importance in causing the lowering of serum protein characteristic of pregnancy.

(3) *Increased Capillary Permeability* — The normal impermeability of the capillary wall is relative and not absolute, and under certain conditions even the large protein molecules may pass through. The capillaries ordinarily become more permeable when dilated and such dilatation constitutes a third factor in the development of edema.

Injury, inflammation and extreme vasodilatation may alter the permeability of the capillaries to such an extent that not only proteins but also red blood cells may escape from the blood stream. In acute nephritis following any one of many infections the capillaries of the glomeruli and of other parts of the body, chiefly the dependent portions, frequently become hyperpermeable through toxic processes, and edema results. Fluids from angioneurotic edema are associated with some vasomotor disturbance which renders the tissue walls even more permeable, thus facilitating passage of fluids into the interstitial spaces. Other localized edemas of toxic or allergic types are probably formed in the same manner.

(3) *Mechanical Pressure of the Tissue Fluids*—We are indebted to Landis and Gibbon for showing that the rate of filtration of fluid into the tissues during experimental venous congestion decreases progressively as edema develops. These investigators conclude that the tissue pressure may be a factor of importance in the prevention of massive edema. This concept is helpful in explaining the tendency of persons who have lost weight to have edema, and of a patient with cardiac disease who has once had massive edema to have slight swelling of the ankles even under the best regimen. In such persons the previous stretching of the tissues has apparently diminished their normal mechanical resistance to fluid accumulation, and waterlogging of the interstitial tissues results.

The mechanism of cardiac edema is chiefly one of increased venous pressure.

Right-sided failure is practically always associated with a rise in venous pressure. This results in a damming of blood into the capillaries and an eventual increase in intracapillary pressure. Since there is no effective change in the osmotic pressure of the blood there is a marked outpouring of fluid into the tissues. This is compensated in part by faster lymph drainage, but this drainage is not sufficient to check the filtration. Given a tendency to edema-formation where there is an increase in venous pressure the amount of fluid lost in the tissues will largely depend on the sodium chloride intake, and obviously on the amount of water ingested.

Some patients with cardiac failure develop extensive edema without much accumulation of fluid in the body cavities, whereas in others the reverse is true. There is evidence that the capillary permeability varies in different parts of the body; e.g., that the peritoneal capillaries are more permeable than those of the extremities. The findings of Salvesen and Linder of a higher protein content in pleural and peritoneal transudates than in ede-

ma fluid would suggest that the capillaries of the serous cavities are also relatively permeable to protein. Hence the osmotic factors would seem to favor fluid accumulation in the serous cavities, whereas gravity would favor accumulation in the lower extremities. It is important to keep in mind that the location of the edema has a direct bearing on the prognosis of a cardiopath. When the swelling is limited to the lower extremities the strain on the heart is less than when it becomes localized in one of the cavities or diffused throughout the body. It is, therefore, of doubtful value in many instances to keep such patients in bed where the relief of the dependent edema is often followed by a more disastrous pulmonary congestion.

The difficult type of edema to evaluate is that complicated by anemia, a common observation of every clinician. Addison, in 1855, describing the anemia which bears his name, wrote "some slight edema is probably perceived about the ankles." This edema, at one time ascribed to cardiac weakness and more recently to a lowering of the plasma-protein level, has been shown to occur independently of either. There is no evidence that anemia leads to altered capillary permeability or to venous stasis. In an effort to solve this problem Fox and Strauss found that when sodium salts were given to anemic patients water retention followed, the more anemic the subject the greater the edema. No satisfactory explanation of this phenomenon has been offered. Apparently anemia *per se*, through some unknown mechanism, leads to a tendency to water retention.

The clinical import of edema formation is obvious and an analytical study of its mechanism in each case gives a clearer understanding of a proper therapeutic approach.

The present-day tendency to restrict proteins in the diets of many chronic invalids, the overzealous administration of glucose solutions to the exclusion of proper evaluation of the bodily requirements in certain gastrointestinal surgical convalescents, the injudicious use or excessive use of saline injections, the failure to recognize the nephrotic syndrome and the necessity for combating the anemias are ample reasons for seeking to arrive at a clear understanding of the mechanism of edema.

The author has drawn freely from the following contributions:

1. HARRISON, T. R.: Failure of the Circulation. 1939.
2. CANTEROW, A.: Review of Recent Progress in Water Balance. *Internat. Clin.*, Vol. 1, March, 1939.

CARDIAC FAILURE.—In the severe forms oxygen will bring relief more promptly than it would otherwise be brought.—Dry.

Rotenone in the Treatment of Chigger Disease*

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ALTHOUGH rarely of a serious character, dermatitis due to chigger infestation (larval forms of various species of mites belonging to the family *Trombidii*) frequently brings the victim to the physician for relief of aggravating skin distress. In this communication we wish to report an account of our clinical experience with the use of 2 per cent rotenone lotion as a contact insecticide and effective agent in relieving the local symptoms accompanying chigger-mite dermatitis. This study was made in the Piedmont section of the South where ample clinical material is not wanting among a rural population, many of whom would thoroughly enjoy the opportunities for summer outings, picnics, camping etc., save for the distressing consequences from exposure to chigger organisms.

Rotenone, the active principal of derris root, was first obtained from the tropical plant, *Derris elliptica*, prevalent on the Malay Peninsula. It is now more commonly made from the South American root (*Lonchocarpus nicou*) which averages a rotenone content of approximately 7 per cent. The root contains a tubotoxin and a series of acid resins which render it poisonous for lower forms of life but not for human beings. This property has made possible its present-day extensive application as a base in the manufacture of sprays and insecticides for agricultural purposes.

Rotenone lotion contains rotenone in a non-oily, emollient, liquid vehicle—a mucilage prepared in proportions of 1 per cent quince seed and 1½ per cent Irish moss—to which is added a solution of rotenone dissolved in chloroform of sufficient strength to form a 2 per cent lotion. Appreciable absorption apparently does not occur from its cutaneous application. Ambrose and Haag¹ were unable to demonstrate absorption of a 10 per cent derris ointment in lanolin in man and rats. Haag² administered a 10 per cent rotenone ointment in petrolatum to rabbits and guinea pigs without evidence of local irritation or absorption. Dorne and Friedman³ have shown by negative patch tests that this substance is not a contact irritant. Patch tests done by us are in agreement with their findings. Thomas and Miller⁴ have found this drug to be an effective remedy in the treatment of scabies which

suggested to us its use against chigger infestation.

In our study the lotion was made available to twenty-two individuals during the summer months of the past year, selected on the basis of history of unusually aggravating cutaneous discomfort from chigger bites during previous seasons. The majority had been accustomed to applying favorite prescriptions and proprietary preparations upon which they had relied for relief in the past. However, all were eager to find a remedy which would improve on these in their own problem, and co-operation was readily obtained. Diagnosis was made in each instance by at least two members of the dermatological staff using the criteria of history of exposure along with the presentation of the familiar typical dermatological picture of chigger disease. Our patients were advised to confine use of the lotion to two applications—the first as soon as the condition was noted, the second twelve hours later.

All of the twenty-two cases reported some relief from the pruritus within thirty minutes, and invariably complete relief within twelve hours after the initial application. Involution of lesions was apparent in 24-48 hours and this was consistent throughout our group. In two instances a mild local burning sensation was complained of which persisted only for the few minutes necessary for the preparation to dry on the skin. Similar examples of this were reported in the article by Thomas and Miller who attributed the effect to the chloroform content of the lotion. Other than for this transient symptom the preparation was universally well tolerated. No complications such as marked excoriations or secondary infection were noted.

We had one patient whose hobby it was to make field trips three or four times weekly for the purpose of collecting insects but her ambition as an entomologist was discouraged by the fact that she was necessarily exposed to attack by chiggers. For a period of three weeks she applied the lotion prior to exposure and noted diminution in the number of lesions incurred as well as the severity of the itching, as compared to instances of exposure without this protection.

From our small experience with this group, rotenone lotion would seem to have a distinct value

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in dermatologic therapy. The physical and chemical characteristics of the preparation make it possible to have available an insecticidal agent which is not messy, has no offensive odor, is not irritating, and does not stain the clothing. These qualities would appear to justify its preference over many of the present-day remedies advised by physicians and enumerated in dermatological texts. Our results would indicate the value of further use of rotenone lotion against parasitic affections, and would recommend its trial in such cases where it might be employed as a prophylactic agent in occupational and other activities in which exposure is to be anticipated.

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4. THOMAS, C. C., and MILLER, E. E.: Rotenone in the Treatment of Scabies. *Am. J. Med. Sc.*, 199:670-764 (May) 1940.

McGUIRE CLINIC STAFF MEETING CLINICAL PATHOLOGICAL STUDY

66-year-old widow farm housekeeper admitted to hospital Dec. 9th, 1940, semicomatose. Her daughter stated that during the previous 12 months the patient, while nursing an invalid husband, had lost 50 lbs. On Nov. 30th she had felt tired and listless and had two liquid stools. A period of constipation followed. On December 8th she had a severe chill. Her b. p. was said to be 135. The following day she became drowsy and then stuporous, and she at times complained of a severe pain in her left shoulder unaffected by respiration.

She had had chest pain for many years, and during the past year increasing dyspnea. In 1939 she was told that her b. p. was 190. She had appendicitis at 16, influenza in 1918, mumps and malaria. Six children are living and well. In January, 1938, she was said to have swallowed a pig leg bone and after 6 months of wheezing, choking and coughing, she coughed up the bone which was stated to be slightly decayed. Her father died of silicosis, mother of cancer of the breast, one brother of cancer of the liver.

A thin, stuporous, old lady with a few carious teeth, the left chest restricted in movement and dull to percussion below the fourth rib posteriorly with decrease in breath sounds and moderately fine rales in this area. The heart was enlarged to the midclavicular line. There were no murmurs and

the sounds were of fair intensity. There was a questionable babinski. The neck was not stiff.

Laboratory studies, December 10th were: reds 3,200,000; hemoglobin 55% (Dare), whites 13,800—88 polys, 9 lymphs, 2 large mononuclears, 1 Turk's cell. Urine dark, cloudy, with a trace of albumin and acetone, no sugar. There were an occasional red, 2-4 white blood cells, 2-4 granular casts. The next day the urine contained an occasional red and numerous white blood cells, a trace of albumin, sugar present. Glucose had been given. Nonprotein nitrogen was 54 mg. per 100 c.c. Wassermann was negative. Blood culture negative. Agglutinations and culture to State Laboratory were negative.

The chest x-ray examination revealed a generalized haziness of the left lung field with the right lung field clear. The aortic shadow and heart shadow were extremely enlarged and the question of a pericardial effusion was raised by this examination. An upright film indicated a moderate amount of fluid in the left pleural cavity. There was a clearly demarcated shadow extending upward apparently from the left lung root into the left upper lobe.

Hospital course: T. ranged from 98.6 to 102°, averaging 100. Average pulse rate 100; respiration 30. She continued to complain of pain in the chest, soreness in neck, and was drowsy except for intervals of alertness. While being turned on her left side she suddenly gasped for breath and died 6:05 a. m. on December 14th.

(The McGuire Clinic is being requested to send report on Diagnosis.)

ALLUSIONS TO A "CIRCULATION" OF THE BLOOD IN MSS. ANTERIOR TO *DE MOTU CORDIS*, 1628

(H. P. Bayon, Cambridge, Eng., in *Proc. Royal Soc. of Med.*, April, '39)

Andrea Cesalpino of Arezzo (1524-1603) studied medicine at Pisa from 1545 to 1549, when Realdo Colombo of Cremona (d. 1559) held the chair of anatomy there. Graduated in 1551, he became professor of medicine and botany in 1555, and in 1592 he was appointed physician to Pope Clement VIII (1592-1605).

In 1655 (during Harvey's lifetime) the "Florentine Aesculapius," Giovanni Nardi, had asserted in his *Noctes geniales* that Cesalpino had previously described the circulation of the blood.

A statue was erected in 1877 to Cesalpino in Rome, with an inscription setting forth that he had discovered the circulation of the blood.

The present position of this controversy is that Cesalpino's writings contain many references to the movement of the blood and the action of the heart; but since these are not presented in a consequent manner, it has been easy to tear sentences from their context, and to suggest that Cesalpino was referring to the circulation as we know it. Nevertheless, a further examination of the text reveals that Cesalpino supported Aristotle's doctrine of the pri-

"CIRCULATION"—p.210

SURGICAL OBSERVATIONS

OF
DAVIS HOSPITAL STAFF
Statesville

WHEN IS GONORRHEA CURED?

WE have observed many cases of pelvic inflammatory disease in women married only a short time, who had been infected by their husbands. Careful investigation of these cases reveals the fact that many of these men had been treated for gonorrhea and pronounced well.

The fact that their wives were promptly infected, and with more or less serious consequences, brings up the question of just what tests should be made before any man who has had gonorrhea can be pronounced cured?

No patient should be regarded as well of gonorrhea unless all gonococci have been eliminated from the genito-urinary tract. The seminal vesicles, epididymis and prostate are organs in which gonococci are prone to persist, even after all symptoms of urethritis have disappeared.

The fact that a patient who has been treated for gonorrhea and pronounced cured after a careful examination of the prostatic secretion, which apparently did not harbor any gram-negative intracellular diplococci, brings up the question as to just how reliable these tests are.

A little pus in the prostatic secretion without the presence of intracellular diplococci is regarded by some as a cure, in case there are no other signs. This, however, is questionable.

A culture of the prostatic secretion might be of help. One test would probably not be sufficient to make one certain that the patient could be regarded as cured.

Unfortunately, one of the most difficult things a doctor has to contend with is the ignorance or indifference, or both, of the patient. Many patients regard the absence of a discharge as a cure and discontinue medical treatment and medical advice. This is responsible for many of the tragedies which we see daily. It is most difficult for anyone to suggest a plan which will prevent the average patient stopping medical treatment when he thinks he is well.

The present methods of treating gonorrhea are much better than we have ever had before. Sulfanilamide and sulfapyridine are astonishing drugs. Fever therapy is also a great help, and in the average patient the combination of fever therapy and sulfanilamide is the best of any treatment we have, especially where the prostate or seminal vesicles are involved.

As long as pus is found in the prostatic secretion, or obtained from the urethra, it is our opinion that the patient should be given a course of sulfanilamide, if necessary combined with fever therapy, until all the gonococci within the body are destroyed. Then, and only then, may we regard a patient as cured.

THE INTERNAL FIXATION OF FRACTURES

WITH the enormous increase in the number of fractures it is natural that many of these fractures are such as to require open reduction and internal fixation.

Closed reduction is best in most cases; but in many cases accurate replacement without interposition of soft parts is impossible without open operation, and maintenance in restored position is impossible without internal fixation. All open-operation cases do not require a bone plate or band. Some other method of holding the ends of the bones together may be applicable which will not require a second operation for its removal. In most cases, however, internal fixation is best done by a bone plate, sometimes with additional support such as the Parham band; or, as in the case of fracture around the trochanter, the combined use of a Smith-Peterson nail and an angle bar. In the application of bone plates, since we have the Vitallium plates and screws available, we can put these on with much greater assurance than ever before.

Vitallium metal does not cause any electrolytic reaction and the screws hold much better than the old-type metal screws—usually long enough for good union.

Years ago in using the steel bone plates and screws of the ordinary type, the screws would often come loose and the x-ray picture would show what appeared to be absorption of bony tissues around the screws and this was sometimes thought to be due to infection. This, however, we now know to be due to an electrolytic change caused by the metal with absorption of bony tissue around the screws, causing the screws to come loose and the plate naturally loosen up. Sometimes, however, this change did not take place and a plate might be left on for a long time before removal was necessary. Removal of a bone plate is usually best, but preferably done after union is well established and the bone is in good condition.

With the great increase in the number of severe fractures, many of which cannot be reduced and held in place without internal fixation, we are fortunate in having Vitallium plates and screws with which to repair these fractures.

SULFANILAMIDE IN THE TREATMENT OF COMPOUND FRACTURES OF BONES

IN THE treatment of compound fractures of bones, most of which become infected at the time of the accident, the use of some sulfonamide is most useful in preventing active development of infection.

Sulfanilamide powder is applied inside the wound. There is controversy about the value of sulfanilamide in such cases given locally and given orally. It is our opinion that the local action of the sulfanilamide is a great help and that a lot of this is absorbed and from this we get the systemic effect.

PREVENTIVE AND CURATIVE TREATMENT OF INFECTION WITH THE GAS BACILLUS

ALL WOUNDS likely to be infected with gas bacillus organisms should undergo very careful debridement. Sulfanilamide locally is a great help. In addition, tetanus and gas-bacillus antitoxin should be given promptly and in sufficient dosage. X-ray treatment over the injured area discourages the growth of the gas bacillus organisms.

In a recent case of gas-bacillus infection in a hand injury large doses of combined perfringens antitoxin were given hypodermically and two x-ray treatments were given daily for a period of three days, the dosage in each case being small. The combined dosage given over the three days was sufficient to give the maximum x-ray effect upon the gas organisms and yet so small as to do no harm to the tissues.

THE DIABETIC DIET IN RETROSPECT

THE importance of dietary restrictions for the victim of diabetes has been recognized, forgotten, re-recognized and emphasized, these, with the advent of insulin, again neglected. An article¹ carrying a historical sketch and bringing the knowledge of this important subject up to the present is abstracted.

If Rollo in 1796 had had a few units of insulin to use with his diet he could possibly have accomplished a better therapeutic result than some of our present-day dietary nihilists. Certainly a diet, which consisted largely of rancid meat and fat would produce few calories. Bouchardat (1806-1886) appreciated the value of dietary restriction as well as the importance of muscular exercise. Following him came Cantani with a diet so rigidly frugal that he kept his patients under lock and key to enforce it. He considered the pan-

creas defective and spared it by rigid carbohydrate restriction. The work of Naunyn, von Noorden and Frederick Allen is familiar to all.

The mother of a diabetic child, one of the writer's patients, brought a canary and a pound of bird-seed; the child made one meal of the entire pound of seed.

There is a false impression that insulin will take care of any amount of food. Overnutrition, carbohydrate or fat, and too much dependence on insulin will overwhelm the patient's own carbohydrate-utilizing mechanism. Any endocrine system not permitted to function a little on its own, but depending entirely on substitution products (e.g., insulin), will tend to lose much of its capacity to function. On the other hand, most diabetic patients kept on a mild but painless restriction of calories with relatively liberal intake of carbohydrate to stimulate their own insulin-producing mechanism, will in time require less and less insulin.

One cannot imagine in the days before insulin having the courage to reverse diet and, instead of allowing 30 grams of carbohydrate and 200 grams of fat, giving 200 grams of carbohydrate and 30 grams of fat.

It is striking how well the average patient will do on 18 to 20 calories per kilogram, most of this carbohydrate. The subnutrition is not complained of as it is on the even higher-calorie low-carbohydrate, high-fat diets; the patient experiences a sense of well-being, remains aglycosuric with greater ease; he maintains nitrogenous equilibrium more easily, and the hazard of diabetic coma becomes reduced; there is progressive decrease in the demand for extrinsic insulin from year to year.

Adequate dietary allowance will keep the individual at, or bring him to, a weight just below actuarial standards, protein sufficient to maintain nitrogenous equilibrium (usually .7 to 1.25 grams per kilogram of body weight), carbohydrate to stimulate the insulinogenic mechanism, fat merely as a caloric filler and to supply the necessary unsaturated fatty acids for optimal nutrition (usually from 45 to 90 grams—more often nearer the lower figure) at least 50 to 60 per cent of protein in the animal form, adequate mineral and vitamin values corresponding with Sherman's optima. Diabetic individuals' economy of the vitamin B complex is faulty and this should be supplied in excess of usual needs—especially for those patients on the higher-carbohydrate diets.

The proof of efficacy of such a diet must rest in the continued well-being of the patient and in the fact that the demand for exogenous insulin progressively decreases year by year.

1. G. E. Anderson, Brooklyn, in *Brooklyn Hosp. J.*, Oct., 1940.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

THE AMERICAN PSYCHIATRIC ASSOCIATION

THE NINETY-SEVENTH annual meeting of the American Psychiatric Association will open in Richmond on May 5th and last through the 9th. The Association is said to be the oldest medical organization embracing the area of our entire Union. Thirteen physicians, probably all superintendents of institutions that are now called state hospitals, met in Philadelphia in October, 1844, undoubtedly as the result of correspondence with each other, and grouped themselves as a medical body. They named their organization: The Association of Medical Superintendents of American Institutions for the Insane. They were engaged in decidedly realistic work, even though they were caring for patients whose minds were out of order, and they used plain and definite language in thinking of their work and in naming their association. They thought of their patients as being insane and they thought of themselves as overseeing the activities of their patients and the work of the employees of their hospitals. I think it probable that at that distant day some of the hospitals were headed by laymen. If that were a fact, it probably accounts for the interjection of the adjective, medical, immediately in front of Superintendents. The word medical served as a protest, too, if my surmise be valid, that those early psychiatrists thought of their professional practice as a medical specialty that could be carried on properly only by physicians.

Some of the hospitals in this country that care for mentally sick folks function now under the headship of laymen. It may be true that some of the state hospitals still have non-medical heads. I think that some of the so-called Veterans Facilities of the United States government have non-medical heads designated as general managers. I experience difficulty in understanding how a lay person, untrained and inexperienced in nursing and in medicine, can exercise an intelligent episcopacy over those who are actually engaged in ministering to the sick. But, in a democracy, almost anything can be tried until it—fails.

The American Psychiatric Association was born in wartimes. The struggle of Texas to detach herself from Mexico and to attach herself to our Union had not been concluded when the thirteen

physicians assembled in the Jones Hotel in Philadelphia on October 16th, 1844, and brought into being an organization that has existed for almost one hundred years. Forty-six years after that inception in Philadelphia, the annual session was held in Washington City, and the name of many words was shortened, but it was still left lengthy and ponderous: The American Medico-Psychological Association.

It may be inferred from the long first name that only medical superintendents of what are now called state hospitals could be members of the organization for the first forty-six years of its existence. There were, in 1844, not many states in the Union, and even some of the original thirteen states had at that time no hospitals for the care of mentally sick folks. North Carolina, for example, had no such hospital for ten years or more after 1844. I think one may assume that by 1892, when the Association changed its name mainly by leaving out of its first name "medical superintendents," some physicians who were not superintendents of state hospitals were making application for membership, probably clamoring for membership. At the seventy-seventh annual meeting of the Association, held in Boston in 1921, the name was again transformed, this time into: The American Psychiatric Association.

The membership of the body has steadily increased until it now numbers about 2500. Probably not more than half the members are able to attend an annual meeting. The meeting is held frequently near a border of the United States, and sometimes in Canada; because of mere distance and the expense of travelling, far-away members cannot attend the annual assemblages at such distant points. And many members are engaged in institutional work from which not even a brief recess can be taken.

In 1869 the Association met in Staunton, Virginia. The State Hospital there had been open since 1828. I think that was the Association's first meeting in Virginia. I wonder if the convocation in Staunton in 1869, only five years after Appomattox, was not a "peace meeting"? The southern states were under military rule, and many of them were still suffering from carpetbaggers. The annual meeting has been held in Virginia four times since 1869. The Association met in Richmond in 1925, under the presidency of the late Dr. William A. White. Two Virginians, superintendents of state hospitals, have been presidents of the body—Dr. Robert J. Preston, in 1901-'02; Dr. W. F. Drewry, in 1909-'10. Two of the thirteen founders of the organization were superintendents of our Virginia state hospitals—Dr. John

M. Galt, at Williamsburg; and Dr. Francis T. Stribling, at Staunton.

The Association's membership has become so considerable and the attendance at the annual meetings so large that a mere town can no longer take care of the gathering, as Fortress Monroe did, for example, as recently as 1915. And that is a pity, for man tends to deteriorate when he lives congregate and with his feet off the soil.

Psychiatry is a pedantic term—too much so, quite, for use with lay people, or even amongst physicians. But, the less we know the more ponderously polysyllabic we are. Definite knowledge, even well-formed opinions, can be stated briefly, in simple language. Psychiatrists are concerned about those portions of a human being that cannot be operated upon by surgical instruments or be directly medicated by drugs. Yet, the cause of the psychiatric condition may be attended to by surgery or by pharmacology. Psychiatry is especially interested in the attributes of a mortal and in his feeling and his thinking, as manifested by behaviour. And those two processes may be affected by many things within the individual and by many things external to the dermal capsule. Man's emotional and intellectual and spiritual health are of much more importance than the condition of his mere physical body. For out of fear and revenge and hatred come war; and out of the devastation and disaster and the despair after the battles must come reconstruction.

Most people do not realize how important it is that the emotions be understood and protected and cared for. The psychiatrists of the world should be as alertly concerned about the emotional state of the people as a mother is about the feelings of her children. Statesmen and so-called financial buccaneers and military leaders sometimes insidiously induct a people into war. And the same sort of group later mismake the so-called peace. Psychiatrists should view the behaviouristics of all such actors with detachment and with unperturbed scrutiny and with understanding—in the very incipency of the discord. And when the arms have been stacked psychiatrists, if any are still existent, should be insistent that the emotions and the spirits of the overwhelmed people be dealt with considerately, and that they be not robbed and enslaved.

Richmond is a good place for the American Psychiatric Association to meet, now, when the world is so disturbed. Our lovely old city is ringed all around by earthworks and by battle-fields and by populous military cemeteries. Hereabouts man has tip-toed in exultation as he has given his fellow-man in the heat of battle the glistening cold steel and the singing bullet. Has man's character

been improved by such behaviour? Has civilization been advanced, or has it been retarded, by such group-activity? The material of war now rumbles through our peaceful old city; and some of it flies, in this direction and in that, far up in the blue sky.

With our neighbour on the north the people of the United States have lived peacefully for more than one hundred years. After fighting each other we seemed to learn, finally, the importance of living side by side neighbourly. Might not the practice be extended, southward, everywhere?

Canada, too, is a member of the American Psychiatric Association, and has been probably since the beginning of the organization in 1844. Dr. George H. Stevenson, Canada-born, the superintendent of a state hospital at London, Ontario, is president of the Association. He will preside over the meeting in Richmond.

The assemblage should evoke substantial discussion of the irrationality of man's warfare against his fellowman. Has it a meaning? What does it mean? Which is the more important, to carry on warfare, or to prevent it? Can it be prevented? Has man any interest in trying to prevent warfare? The time is at hand to think, to speak out, to act. Dr. Stevenson's home-country is at war. Let us pray that soon our Association may hold a great jubilee in Canada!

HOSPITALS

R. B. DAVIS, M. D., *Editor*, Greensboro, N. C.

HOSPITALS IN THE FUTURE

ALL of the countries now at war have begun planning how they will exist when peace comes. It would be wise for the hospital people to give careful consideration to their future. The handwriting on the wall is plain and only the deaf, dumb and blind will be unable to discern the meaning thereof.

There has been a great deal of talk in the civilized, Christian world about might not making right. Those of us who believe this cling desperately to the promise in the Scriptures, but we are not living in a world of that nature. The fact is might makes right in this generation in almost all of the countries upon the face of the earth. It is granted that this might is much more abused in some countries than it is in others. We in America should thank our Creator that here this might is not as destructive and degrading as it is in those countries under the rule of dictators. This does not mean, however, that to a large extent might has not trampled right under

its feet, even in our Country.

Let us look for a moment at some of the dictations of might. The law-making bodies which govern our Country make gambling a crime; but there are many of them who play poker by the hour with the law-enforcement officers of their county or city. This same group will vote for and pass laws designed to prohibit drinking. There are many of them who keep whiskey in their homes and offices and drink it, many times to excess.

Among that august body known as judges, or justices, more than in any other group, we should find right making might. It is a well known fact, nevertheless, that the crime of a rich and influential man is seldom punished to the extent of that of a poor man. I am informed that it is a very serious charge for a lay person to discuss with any judge his decision in a case. All human beings are subject to errors but to make it a crime for any person to discuss one's errors with him seems to be leaning away from democracy.

We may, along with others, analyze the law-enforcement agencies of our Country. On our highways a person may be arrested for speeding by an officer who only a few days before drove over the same piece of road, to attend the marriage of a distant relative, at a far greater rate of speed than was made by the motorist who was just given a ticket. How many times has it been brought to the attention of the public how unfortunate it is to be a poor white man or a negro when he figures in a wreck with some influential person. The might to arrest and lock up in jail lay in the hands of the officer. Sometimes this officer's decision is based upon this might rather than the right of the situation.

At one time the banking business stood ace high in our Country. The reason was it possessed the might. What happened to this great institution is well known to us all. The catastrophe which befell those banks and bankers was not centered around small legitimate loans of the average citizen but rather around the large illegitimate loans. And, especially was this true of those which had their beginning around a poker table and around a flask of "bottled-in-bond," or perhaps were concocted when the recipients of the loan had lavishly entertained the bankers at some fashionable resort. Sound business integrity always had a right to expect a fair deal but it did not possess the might to demand and the results in many cases were disastrous.

The present-day administrative inclinations make us frown, perhaps, upon labor where labor would not have deserved it under a different ad-

ministration. When an individual or a company has kept his and its obligations to employees there is no legal right for employees to dictate what that business shall do in the future. Assuredly there can not possibly be any right or justice for the employee to take charge of the employer's property or determine who shall or shall not work in his place should he decide to quit. There is no democracy and there is no justice when one individual or group of individuals unlawfully seize or possess the private property of another. But, because the employees, through numbers alone, possess the might they make these things right in their minds, put democracy on the scaffold and hang justice by the neck.

Now to examine our own, the hospital, business. We hear from many sides the demand for shorter hours and more pay. One sometimes wonders what the average individual profits by less laboring hours and increased pay. It does seem that people are much more restless and oftentimes in more of a financial strait than ever they were before. It might be best for these things to come to pass but I have my serious doubts as to whether we are yet prepared to accept them and use them to the best advantage.

It is easy to point out the shortcomings of society, politics or religion. It is not so easy to say what is the cure. It is the writer's earnest desire to now point out some of the remedies.

We must not start with the humble maid and orderly and vent our spleen on these poor individuals who probably do better considering their opportunities than a great many of the leaders of our Country. Instead we must start with the trustees or directors of hospitals. It is not exaggerating to state that four-fifths of the personnel of this group are either criminally indifferent or mentally lazy insofar as their duty to the hospitals is concerned. This group of individuals in the future hospitals must change. Every man or woman must be honest enough not to accept appointment on a hospital board for prestige or authority, but rather must be willing to give of his or her time and talent freely to the problems pertaining to such a position. And, further each must make up his or her mind in the beginning that such is no easy job.

Next in order comes the business manager or superintendent. Here is a great opportunity for direct authority to attempt to make might right. In the future there will be no place for the hot-headed, dogmatic, partial dictator to operate a hospital; instead, those in charge of hospitals must be patient, longsuffering, and yet at the same time demand good service for the patients. They

must always be willing to give time and thought to any troubled employee. A decision made in the heat of temper by an official head of an institution does that institution a great deal of harm.

In the nursing staff the picture changes from individual might and authority, as in the case of the business manager or superintendent, to collective might and authority. The writer does not believe that methods of unionism should ever prevail in this most noble profession. It is too far beneath a true nurse's dignity and noble aspiration to sell herself to any type of unionism. Therefore, the nursing profession should steer clear in the future hospitals of any semblance of a mercenary strike. If it does not the lay public will soon lose its deep love, admiration and respect which it now has for it. We cannot believe the nurses want this to occur. Nurses must be loyal to their superiors and their patients as well as to themselves. However, loyalty to their great aspirations, which lie deeply buried in the bosom of every true nurse, gives more satisfaction than anything else.

The last group to be considered is that of the orderlies and maids. For the opportunities which these people have had in life they certainly do well, but the future hospitals will demand of them a little more determination, a little more satisfaction out of a job well done. They must learn to purpose their lives as orderlies and maids and not to consider themselves as simply laborers. This ideal can be instilled in the average man or woman in the beginning of his and her services if only the nurses will take a little time to encourage and instruct them.

Therefore the future hospital will be bigger and better if all concerned will see the handwriting on the wall and do something about it.

CARDIOLOGY

CLYDE M. GILMORE, M. D., *Editor*, Greensboro, N. C.

THE PREVENTION OF RECURRENCES OF RHEUMATIC FEVER

IT IS NOW generally agreed that sulfanilamide is not only worthless in the treatment of an *acute attack* of rheumatic fever, but also that its use there tends to provoke many toxic reactions. Thomas, France and Reichsman, of Baltimore, in an article in the *Journal of the American Medical Association* of February 15th, report the results of a four-year study on the use of sulfanilamide to *prevent recurrences* of rheumatic fever.

Their work was done on adults who had had at

least one major episode of rheumatic fever in the preceding three years. The first two years of their study they gave each patient 5 grains of sulfanilamide t.i.d., and in the second two years 10 grains b.i.d., daily during the rheumatic fever season—from October to June. They found toxic effects to be very rare, and had to discontinue the treatment of only two patients because of toxicity; and were able to continue the treatment even when the white blood cells stayed around 4,000, as they did in many cases.

The incidence of hemolytic streptococcus infection in general in the treated group was found to be markedly reduced; and there was a greatly diminished ratio of positive throat cultures. There were no major attacks of rheumatic fever (patient confined to bed a week or longer) in the treated group, consisting of 79 patient-seasons; while there were 15 attacks in the control group of 150 patient-seasons. In the treated group there were two minor attacks, as against six in the controls. There were four deaths in the control group, two being from subacute bacterial endocarditis.

The authors feel that sulfanilamide is of great prophylactic value in rheumatic fever, and should be given regularly to children after their first attack. However, before the use of sulfanilamide as a preventive of rheumatic fever is generally accepted, these studies should be substantiated from other sources.

STREPTOCOCCUS VIRIDANS ENDOCARDITIS

THERE HAVE recently been some cures reported from this disease, formerly thought incurable, which makes early diagnosis important. In this and in other forms of subacute bacterial endocarditis, bacterial vegetations form on the endocardium, usually a previously damaged or diseased valve. These vegetations grow, and finally break off into the blood stream, causing death by occluding vital arteries.

A new method of treatment uses sulfanilamide as a bacteriostatic, combined with heparin to prevent the formation of clots at the infected sites, thereby preventing fatal emboli. Obviously, this treatment, to be effective, must be started early, before blood clots have already formed, and before the streptococci are buried in the vegetations where the therapeutic sulfanilamide can not get at them.

Dr. Henry A. Christian, of Boston, reported a study of 150 patients with streptococcus viridans endocarditis in the *Journal of the American Medical Association* of March 15th. He says that the early symptoms are those of toxemia, and are

marked enough for the patient to remember the time of onset. Malaise and ready loss of energy were symptoms in 46 per cent of the patients, many of whom were also feverish; joint and muscle pains similar to those present in la grippe, were present in 42 per cent; nausea and anorexia in 24 per cent; headache less frequently.

These symptoms of toxemia could, of course, mean almost any infectious disease. However, Dr. Christian emphasizes that in any case in which these symptoms persist for more than one week, with no definite evidence of any other disease, subacute bacterial endocarditis should be suspected. This is especially true of any patient having previous heart disease, such as rheumatic fever or congenital heart disease. These patients should have repeated blood cultures in an effort to establish the diagnosis. However, even in those where the cultures remain negative, unless the patient is proven meanwhile to have some other disease, chemotherapeusis should be started. Dr. Christian considers it far better to treat early for a mistaken diagnosis than to wait until vegetations have formed and success in treatment becomes very unlikely.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

RUPTURE OF THE SPLEEN

RUPTURE of the spleen is an intraabdominal tragedy which, even today, has an appalling mortality rate. Up to 1890 cases as a rule were treated expectantly. Of Elder's series of 52 uncomplicated cases not operated upon 55 died. Eisendrath in 1902 collected a series of 50 cases operated upon with a mortality rate of 22. Vedova in 1913 reported a mortality of one-third in 194 cases of splenectomy for traumatic rupture. Today the mortality, although appreciably lower, is still high.

Rupture of the spleen may be spontaneous or traumatic. Spontaneous rupture in most cases follows splenic disease, particularly splenomegaly in some form. As the spleen enlarges it, from congestion and from disease, tends to become more friable and less resistant to force. Except in cases of chronic fibrous splenitis the capsule and the supporting structure of the enlarged spleen are not thickened, although they are necessarily subjected to increased tension from within and from without. As the spleen extends below the costal margin the protection of the overlying ribs is lost.

Spontaneous rupture is becoming absolutely less because cases of splenomegaly are now operated upon early, and relatively less because of the increased incidence of motor traffic injuries.

However, a spleen normal in size and consistency, without atheromatous arteries or disease may rupture spontaneously even in a child. A healthy boy of eleven recently entered the Columbia Hospital after having been in bed for two days complaining of pain in the left upper abdomen. His temperature was 99° F. There was leucocytosis, with the hemoglobin index 50. At operation massive intraperitoneal hemorrhage from a small rent in the spleen near the hilus was found. The boy recovered after splenectomy. The spleen was not enlarged and was grossly and microscopically normal in every way. No history of a preceding blow, fall, kick or trauma of any kind that might have caused rupture could be obtained.

Traumatic rupture occurs more often in males for in industrial life men are more exposed to trauma. An enlarged spleen is readily ruptured if the force is properly applied, and a normal spleen, although lying under the diaphragm and protected by the lower ribs, may also be ruptured if the force is sufficient.

The urgency of the symptoms of rupture, whether spontaneous or traumatic, depends upon the extent of the rupture, as this largely determines the rapidity of the hemorrhage. Although the spleen's parenchyma is honeycombed with large spaces filled with venous blood, gross bleeding does not always immediately follow traumatic injury. Hemorrhage may at first be intracapsular and massive intraperitoneal extravasation may not occur for three or four days after injury.

Symptoms are those of shock and of internal hemorrhage. There is tenderness over the left upper abdomen. Pain is not severe. There is shifting dullness on change of position. There may be pain in the left shoulder from irritation of the phrenic nerve.

When rupture is suspected exploratory laparotomy should be done after reaction from shock has taken place. Donors for transfusion should be typed and ready for emergency use, if necessary, both before and immediately following operation. Autotransfusion may be done, if there is no contamination from bowel contents in traumatic cases. The object of the operation is to control bleeding and to save life. Although tamponade or suture of small rents may sometimes suffice, splenectomy insures permanent control of hemorrhage and in most cases is the operation of choice.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

ROUTINE VISUAL FIELD EXAMINATION IN OFFICE PRACTICE

FOR the past 15 years the writer has made it routine to examine the visual fields of every patient who comes to his office. The procedure is simple, consumes not more than two minutes unless disease is discovered, and routinely can be adequately done by any intelligent office nurse who has had practical training in this work. The results are interesting and instructive, frequently including valuable information of an unsuspected nature. Few difficulties are met with in its accomplishment and these are in children under 4 years of age, those too blind to see form or a small dim light, and certain types of mental defectives. In highly-nervous patients and in those of poor coordination and those whose attention is hard to keep, patience, perseverance and a pleasant mein on the part of the examiner will usually result in procuring satisfactory field data. Time is saved and results of the test are more accurate if a brief but clear explanation is made to the patient of what is expected of him in the test. If the approach is that of making a game of the test occult fears are dispelled, hence coöperation is enhanced and the results are more accurate.

The tangent screen or some simple modification of it is quite sufficient for rapid preliminary testing.

In making the test it seems best not to delimit the blind spot until the rest of the visual field has been examined, or many patients will become nervous and their coöperation will be poorer, because of learning for the first time that there is a blind spot in the eye. An explanation of its significance is in order at the conclusion of the test and it will be found that nearly all patients are greatly interested. If the field findings are suggestive or are definitive of intraocular, optic nerve or intracranial disease, more conclusive data may be had by more refined testing. If a pathological field is uncovered, and many are so found by it, and if thoroughly worked out other methods of field testing, from a constructive clinical standpoint, do not add a great volume of evidence to that found by this method. It is realized that in clinics where a graduate perimetrist is available the refinement in testing and with the use of special visual field instruments more diagnostic evidence will be found, and made available, especially in borderline and unusual visual-field pathologic states. However, in the office of the great majority of

oculists such refinements in instrumental technique can not be had, or utilized if available, because of the time required; but the use of the screen as briefly outlined, with an intelligent appraisal of its real value, will uncover the great majority of pathological conditions and lead to an accurate diagnosis of the problem presented.

Brief routine use of the test is not without merit in evaluating the psychic reactions and the nervous stability of the patient. It is found that those who have much difficulty in fixing their attention on the center of the screen, or who can not do so, greatly magnify their real or imaginary ailments, and otherwise show evidence of an unstable nervous system.

UROLOGY

For this issue, HOMER M. DANIEL, M.D., Anderson, S. C.

CARBARSONE SUPPOSITORY IN VAGINA CASTING X-RAY SHADOW MISTAKEN FOR STONE IN BLADDER

Report of Case Further Complicated by Stricture of Ureter Giving Classical Symptoms of Renal Colic

A white, single, saleswoman, aged 25, consulted her family physician two months ago about pain in the lower, left abdominal quadrant, and soreness and tenderness in region of left kidney. Symptoms came on gradually. Her medical advisor made a tentative diagnosis of ureteral colic. The pain was so severe it was necessary to give opiates for relief. The patient was unable to work for several weeks, the symptoms being aggravated by her being on her feet. Symptomatic treatment was given with the belief that the patient would probably pass a small stone and thereby be relieved. The condition gradually grew worse and the patient was referred to the Anderson County Hospital X-ray Service for intravenous pyelogram.

Both kidneys appeared normal in size and location. Slight left hydronephrosis. In the bladder region a shadow the size and shape of a pigeon's egg was noted. No other shadow that might be interpreted as stone was found in kidney, ureter or bladder. Urine analysis showed albumin and sugar to be negative with 10 pus cells to each high-power microscopic field.

X-ray Diagnosis: Stone in bladder.

Urological Examination: Patient referred to the writer for crushing and removal of bladder stone. Examination of the x-ray plate convinced me that the shadow was a stone in the bladder. The patient was sent to the cystoscopic room for the stone to be crushed. Under caudal anesthesia an observation cystoscopy was done. No stones



Shadow in bladder area mistaken for stone

nor diverticula were present in the bladder; the ureteral orifices were normal in location and appearance except that the left was slightly engorged. A number-6 catheter was passed into the right kidney without meeting obstruction; but I was unable to pass a number-6 on the left. A number-5 was finally passed with much difficulty due to spasm of ureter and 10 c.c. of residual urine was drawn off. This specimen showed from 10 to 15 pus cells per high-power microscopic field. The urine from the right kidney was normal. Catheter on the left was left in overnight for dilatation with irrigation every three hours with 1 to 3 aqueous solution of merthiolate and distilled water. The catheter was removed the next day and the patient discharged.

Urological Diagnosis: Pyelitis and stricture of left ureter.

Explanation of Bladder Shadow: Upon further questioning, the patient stated she had been taking treatment from her family physician for trichomonas vaginalis and that a part of this treatment consisted of the vaginal insertion of a carbarsone suppository the night before the x-ray examination of the kidney and bladder region was made.

Subsequent History: The reaction to the urological treatment was stormy and lasted two or three days. One week later the left ureter was dilated at the office, and this was followed by severe reaction. Since then she has had three dilatations at office. At the last treatment a number-8 catheter was passed with some difficulty, but no reaction followed the last three dilatations. The patient was discharged as cured and is now performing her usual work.

SUMMARY AND CONCLUSIONS

1. A case is reported wherein pyelitis and stricture of the ureter gave the classical symptoms usually associated with ureteral colic.
2. A carbarsone suppository inserted in the vagina 12 hours before x-ray examination cast a shadow that was almost pathognomonic of bladder stone.
3. The inherent danger in a situation of the type confronted here is that in the absence of a thorough cystoscopic examination it is highly probable that a patient might be subjected to cystotomy.
4. It is apparent that the lesson taught here would lead to the conclusion that it is the part of wisdom to do cystoscopic examination, and to recheck an intravenous pyelogram with a retrograde pyelogram, whenever possible, before any operative procedure is undertaken on kidneys, ureters or bladder.

OBSTETRICS

HENRY J. LANGSTON, M. D., *Editor*, Danville, Va.

REMOTE VASCULAR LESIONS OF THE TOXEMIAS OF PREGNANCY AND THEIR CLINICAL SIGNIFICANCE

The conditions which go under the name of toxemias of pregnancy are various and confusing. An abstract of a helpful article on this subject is here given in some detail.

The type of toxemia here discussed recurs in each pregnancy, is more severe and begins earlier in the pregnancy, and tends to end in uremia and death. The renal retinitis and the uremia confuse with the end result of chronic glomerulo-nephritis. This condition is a vascular disease manifesting itself first in the arterioles, and is indistinguishable from essential hypertension. The kidney, as the most sensitive structure involved, may be relied upon for a manifestation of disturbance. Hypertension and albuminuria are the earliest findings. Their persistence in the non-pregnant state is diag-

nostic of the condition in the absence of other obvious cause.

Evidences of one or another form of toxemia appear usually in the last half of pregnancy. After delivery hypertension and/or albuminuria persist. Blood pressure above 140/90 or traces of albumin in the catheter urine are abnormal findings. Striking is the frequency of cardiovascular disease in the parents of these patients. Observation and recording of blood pressure and urinary findings at an interval of at least six weeks postpartum is a *sine qua non* of adequate obstetric care.

In subsequent pregnancies, increases in the degree of these findings will occur earlier in each. The arteriolar damage advances more rapidly in the Negro.

Kidney function is normal to all tests save pregnancy until the terminal stages, when uremia and the clinical picture is unmistakable. Albumin is less in the urine of the arteriolosclerotic toxemia than in that of the acute pregnancy toxemia of a similar degree of hypertension. Blood chemistry studies are at normal save for normal pregnancy variations until the terminal stages.

The ophthalmoscopic examination is of great value in the diagnosis. Differentiation between moving localized spasm and fixed irregularities due to arteriolosclerosis may be readily made on repeated examination.

In advanced arteriolosclerosis the retinal vessels show tortuosity, gross irregularities of size, arteriovenous crossing phenomena and still later, associated retinal exudates. Retinal hemorrhages at any stage is a grave prognostic sign.

Care of the toxemias of pregnancy is incomplete unless it includes careful observation of the eye-grounds.

Patients may undergo multiple pregnancies without destruction. Pregnancy may produce a speedy destruction. The condition follows the general course of essential hypertension.

The pregnancy itself may be prejudiced. Ablatio placenta fairly closely parallels the severity of the arteriolosclerosis and the height of the blood pressure.

Only about half of the cases of premature separation show any evidence of toxemia.

A decision as to a residual arteriolosclerosis after preëclampsia or eclampsia must often be put off until six weeks postpartum. Occasionally evidences of abnormality disappear after an eclamptic is discharged before the blood pressure and urinary findings have returned to normal. Occasionally a patient discharged with apparently normal findings returns with evidence of arteriolosclerosis. Observations following pregnancy of women who have

had toxemias of pregnancy are of great importance. About one-third of the total toxemias seen in clinic practice are of this nature. One-quarter of eclamptics may be shown to develop arteriolosclerosis.

For every day a patient is allowed to continue with a toxemia of pregnancy showing hypertension and/or albuminuria, the chance of the establishment of permanent vascular change is increased. Induction of labor before term may be the method of choice. No patient with an established arteriolosclerosis should be advised to undertake pregnancy. Sterilization is indicated. Occasionally these patients abort spontaneously in time to save themselves.

Careful watch should be kept on patients suffering from pyelitis of pregnancy in order to recognize and treat at the earliest possible moment an extension to the production of a clinical pyelonephritis. Drowsiness, increased protein metabolites in the blood, early interference with kidney function, renal acidosis etc., are the hallmarks of this condition.

The various forms of nephritis may heal under adequate therapy and subsequent pregnancies may then be undertaken without the expectation of difficulty provided as is usual in young people, sufficient kidney parenchyma is left to carry on function. This is in striking contrast to arteriolosclerosis in which, once established, the disease process advances with each pregnancy.

Chronic glomerulonephritis is seldom an obstetrical problem. It tends to occur in later life, with malaise, anemia, interference with nutrition, all of which make it unusual for conception to occur. If pregnancy does supervene, the problem is similar to that in acute nephritis.

SHOULDER AILMENT TREATED EFFECTIVELY BY MEDICAL MEANS

(G. F. Dick et al. in *Jl. A. M. A.*, March 22nd)

A fairly common condition, calcification in the supraspinatus tendon, with pain and limitation of motion of the shoulder, most frequently between the ages of 30 and 45, often erroneously diagnosed as bursitis, arthritis, neuritis, paralysis of the radial nerve or rheumatism, is amenable to medical treatment. The treatment is: (1) rather large doses of ammonium chloride, (2) rest of the part, (3) removal of foci of infection, (4) physical therapy.

"CIRCULATION"—From P. 200.

macy of the heart and at the same time did not oppose Galen's opinion regarding the straining of the blood across the perforate interventricular septum of the heart; moreover, though Cesalpino did employ the word *circulatio*, it seemed to have a different meaning to that it obtains nowadays in relation to the blood. These two important facts—that Colombo lectured on anatomy at Pisa in 1545, during Cesalpino's student days and that the word "circulation" in the latter's writings seemed to have a peculiar meaning—have been overlooked.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

HOPE FOR PIMPLY-FACED YOUTH

MOST of the writings on acne vulgaris are pessimistic. They say this and that *may* be done, but the general idea conveyed is that if the patient lives long enough he will probably get well, all scarred up.

Here comes the son¹ of a great dermatologist and lion-hunter, saying a certain method of treatment will cure in most cases, in a reasonable time period, usually with little or no scarring. And the treatment requires no expensive apparatus.

Here it is in abstract:

Any nonmedicated soap is to be used gently with tepid water. By skillful removal of comedones scarring is minimized. Remove gently without crushing particles of lipoid into surrounding tissues. The pustule containing a semidigested comedo must be slit just widely and deeply enough to let out the contents. Compress by *stretching* rather than by *squeezing*.

Forbid any fatty foods. Allow freely: bread and cakes made with little butter or lard, cereals; lean meat, fowl, or fish once a day, all vegetables and fruits (except as noted in low-carotene diet for certain cases). Allow sugar, preserves, jam, jelly, honey, molasses, candy made of sugar, but not of butter, nuts or chocolate.

Iodized salt, pepper and spices are allowed. Alcohol is restricted greatly; tobacco is allowed; coffee, tea and coca-cola are restricted to two cupfuls a day of any one of them.

The low-carotene diet for cases mainly of the rosacea-like, zanthoma-like type forbid: carrot, pumpkin, squash, sweet potato, spinach, yellow corn, highly colored vegetables and fruits in general, catsup. Allowed are rice, beans, peas, pale corn, grapefruit, pears, peach, apple, banana.

Iodized salt should be used in cooking. The diet must be followed strictly and continually. The diet is so low in calcium that in pregnancy calcium must be provided. It is low in vitamin A, but harmlessly for a period of four months.

Thyroid extract is in all cases given to tolerance without regard to b. m. r. or the chemistry of the blood. Coffee in excessive amounts often masks some of the symptoms of hypothyroidism. Given to chronically fatigued, thin, worried patients, thyroid dosage improves sleep in part rids them of their nervousness and helps them to gain in appetite and weight. Desiccated whole gland substance,

2 grains each day with the evening meal or twice a day with breakfast and dinner, increased to just less than the amount which produces symptoms of excess. After two weeks, the need may have been made up so that a smaller dose will maintain.

Objective improvement is visible in a week, is well defined in the month and is excellent within six months.

Acne vulgaris is a metabolic disease. It depends on imbalance between the dietary intake of lipoids and the patient's capacity for metabolizing lipoids.

Lipoid deposits in comedones, cysts and acne-form lesions must for the most part be removed mechanically, for if allowed to remain they provoke inflammatory reactions. In rosacea-like cases this cannot be done but the low-carotene diet is followed by spontaneous resorption.

Milk and milk products, being particularly rich in fat, are the commonest harmful ingredients of the diets of patients with acne; their baneful effect has nothing to do with allergy.

There you are—something definite and positive and cheerful.

In our observation acne vulgaris has not been as obstinately resistant to treatment as it is generally represented to be; but it has been persistent.

The method Dr. Sutton outlines is well worthy of hearty welcome and honest application.

We express to Dr. Sutton, in the name of all the readers of this journal, the most sincere thanks.

COMMON ERRORS IN THE DIAGNOSIS AND TREATMENT OF ANORECTAL DISEASES

OSLER is said to have remarked that the difference between a good doctor and a poor doctor is that the good doctor examines the rectum. There are few ways in which a general practitioner can better serve his patients than by making rectal examinations, then treating most of the conditions he finds.

An excellent paper illustrating this point is abstracted.

Most diagnostic errors in anorectal diseases are due to failure to make the simple digital examination of the rectum which should be a part of every physical examination. A proctoscopic examination should be carried out when anything abnormal is found on digital examination, or when the patient has any symptoms referable to this region. Most carcinomas of the terminal portion of the colon are within reach of the finger.

Ectropion of the rectal mucosa is commonly encountered after "Whitehead operation," not the

1. R. L. Sutton, Jr., Kansas City, Mo., in *Jl. Mo. Med. Assn.*, Feb.

J. R. J. Jackman, Rochester, Minn., in *Jl. Iowa Med. Soc.*, Mar.

operation Whitehead described. In this erroneous operation the rectal mucosa has been sutured to the skin outside the grasp of the anal musculature. The discharge and moisture resulting, excoriated and infected, burning and itching, frequently is treated as anal ulceration or anal fissure. Application of various cauterizing agents to the exposed mucosal surface is made under the physician's false impression that he was dealing with a fissure. Treatment is dissection of the exposed mucosa and restoration to the normal protected position *inside* the anal musculature.

All anal fistulas originate in the crypts at the dentate margin. Treatment is to convert all fistulous tunnels into open ditches; all tissue overlying or external to the probe must be incised, and deridement of the margins of the resultant wound *whether or not muscle intervenes*. Anal incontinence is more often the result of inadequate operation than of completed fistulectomy in which part or all of the anal musculature has been severed once or several times.

Rectal bleeding is too frequently assumed to be hemorrhoidal in origin.

One patient who consulted her physician 1½ years previous to being relieved, during the two months ensuing received 23 injections of some sclerosing agent for internal hemorrhoids, but the bleeding had persisted. Several months of a special diet and various drug and vaccine therapies for colitis had not produced any change in symptoms. On proctoscopic examination a pedunculated polyp 2.5 x 2.5 cm. was found, destroyed by fulguration and the bleeding promptly subsided.

Hypertrophy of the anal papillae is the result of infection in the anal canal or crypts. After the process has subsided complete recession of the papilla is rare. The hypertrophied papilla is part of the dentate margin covered by squamous epithelium, the same color as the skin. Polyps usually arise above the dentate margin from the columnar epithelium, have a typical polypoid appearance, are more friable and bleed easily. The malignant propensities of the polyp are well known whereas hypertrophied papillae cause trouble only to the extent of protrusion, sensation of rectal fullness, pressure or pain.

Most small sessile and pedunculated polyps in this region can be destroyed very simply by fulguration without resort to anesthesia. Any attempt at removal of enlarged papillae will require some form of anesthesia.

Rectal tumors of chemical origin result from the use of various sclerosing preparations in the injection treatment. From oil, particularly mineral oil, the resultant fibrous tumor may persist for years

as a single nodular mass or an annular stricture. The condition has been mistaken for a carcinoma, and radical operation has been performed to remove the supposedly malignant tumor. The patient's report receiving injection treatments; the overlying mucosa is usually normal, although it may be scarred and adherent. The condition also may be confused with a chronic internal abscess or fistula, and examination with the patient under anesthesia may be necessary to rule out this possibility.

An extrarectal mass in the pouch of Douglas or rectovesical space metastasizes from a carcinoma in the upper part of the abdomen, or some intraabdominal inflammatory disease, may impinge on the anterior rectal wall and produce a mass confused with primary rectal carcinoma. In such cases, the patient's principal complaint may be referable to the rectum, and the finding of the rectal shelf may be the first significant clue to discovery of some obscure abdominal disease.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

FITS IN ADULTS

THE first thought is stop the fit. In status epilepticus the patient has a series of fits without regaining consciousness and death may ensue unless the seizures are promptly relieved.

A physician always ought to have in his bag paraldehyde and sodium phenobarbital. Paraldehyde may be given by mouth, vein, muscle or rectum. For an adult having fits begin treatment with an intravenous injection of 1 to 2 c.c. of paraldehyde (drawn from a stock bottle as the solution is sterile). This usually will result in prompt cessation of the seizure. A second injection of 1 c.c. may succeed after the first has failed. This dosage should be less if the patient has had any other narcotic in one or two hours. If the seizures continue, 4 to 6 grains of sodium phenobarbital intravenously or intramuscularly, preferably by the route not used for the paraldehyde. The patient may remain in stupor. Then pass a nasal tube into the stomach so that fluids and dilantin sodium may be administered at regular intervals until the patient recovers consciousness. If there is fever repeated tepid or cool sponging is indicated.

Repeated attacks jacksonian in type do not respond so readily to therapy.

In the absence of paraldehyde or sodium phenobarbital use morphine, ether or chloroform with

caution. Keep in mind that one of the symptoms to be combated in status epilepticus is coma.

In grand mal seizures a 1½ grain capsule of dilantin sodium t. i. d. is the usual dose. Six capsules (9 grains) should be the maximum per day. It is strongly alkaline and must be taken during or immediately after meals to prevent gastric distress.

The patient should live as normally as society and his disease will allow him to live. Young persons afflicted with convulsions should continue in school. If school authorities object, it falls to the duty of the physician to enlighten them. Children will accept much about which they are given a reasonable explanation.

Persons subject to seizures have a smaller number of them in a normal environment than in a restricted one. The use of alcohol must be interdicted.

With the intelligent patient always hold out hope of something better, for the reason that many keen minds are on the trail of his disease. I have encouraged all of my intelligent patients to join the Laymen's League Against Epilepsy, whose offices are at the Harvard Medical School.

Those with low intellectual levels who are having many fits despite medication should be sent to institutions.

Petit mal therapy is not satisfactory. The anti-convulsants should be juggled about in an attempt to find something that may benefit.

Jacksonian seizures, the attack begins in one part of the body, usually in the face, fingers or the toes. The convulsion may remain localized or it may spread and the patient may feel the numbness advance, or watch the twitching progress up an extremity. If the convulsion spreads to the other side of the body the patient may lose consciousness and the attack become a grand mal.

The treatment usually is eventually surgical, although it is well for the patient to have had a trial of dilantin sodium, phenobarbital or bromide before the operation. This trial of drug therapy should not delay surgery indicated.

Psychomotor epilepsy manifestations are profound. The patient in an attack may walk about mumbling and picking at his clothes or he may commit some evildoing. The amnesia may last for long periods, and the person may travel great distances and regain his senses in a distant city. The patient is usually morose during the attack, but may be violent. The pattern of the attack is usually the same from time to time. There may be in the attack tonic spasm, or twisting of the body and suffusion of the face; there may be no fall and there never are the clonic, jerking movements of

the grand mal type. A psychic seizure may be manifested as a period of altered disposition or of aggressive behavior, entirely foreign to the nature of the individual. If the patient suffers from grand mal or petit mal in addition to the psychic equivalents, or if an electroencephalogram is made, the diagnosis usually may be arrived at.

Brilliant results have been obtained in psychomotor seizures with the use of dilantin sodium.

It is extremely dramatic to see a potential murderer changed into a useful citizen practically overnight.

Though the opinion that heredity is an important influence in epilepsy is widespread, only one epileptic person in five is able to name any relative who has been similarly affected.

EARLY CARE OF DEPRESSED FRACTURES OF THE MALAR BONE

Few textbooks of surgery give any information on what to do about these fractures. There are few articles on the subject in the journals. Yet the number of such fractures is great; and they are important, threatening, as they do, not only the comfort and the life of their victims, but destruction of whatever of pulchritude one may be blessed withal. *Vanitas vanitatum*.

Here is the substance of an article¹ of great helpfulness to those of us who have to take care of such cases.

A rather strong bone in an exposed position, on four weak supports, accounts for the variety and number of these fractures.

There may be so much swelling that depression may not be noticed on inspection; but if palpatory evidence of depression is present, one can rest assured of the diagnosis.

These fractures unite as a rule by the end of the third week; therefore treatment should be instituted promptly.

The hair is shaved from the temporal region, and a transverse (lying down) incision one inch long is made well within the hairline. The edges are retracted, and a nick is made in the fascia, then enlarged so that a bone skid one-half inch wide, and eight inches long, with curved blunt ends passed between the fascia and muscle downwards, the convex curve of the instrument rests against the posterior aspect of the malar bone. This is surprisingly easy to accomplish.

A pad of gauze or cotton along the upper edge of the incision to protect the skin from too much pressure and, using the skull as a fulcrum, lever the bone into position. The skin closed with clips, black-silk, horse-hair or Allegheny steel, inter-

1. V. E. Johnson, Atlantic City, in *Jl. Med. Soc. N. J.*, Mar.

rupted sutures to allow for possible drainage. Don't drain the wound.

After reducing, if the bone slips out of place easily the antrum has been crushed. In this case retract the angle of the mouth and make a one-inch incision in the canine fossa down to the bone; push the periosteum away from the maxilla, feel for the zygomatic ridge and open the antrum just anterior to this ridge, using a quarter-inch gouge. Pass a suitably curved instrument into the antrum and elevate the wall of the antrum and the malar will remain properly reduced.

Pack the antrum with one-inch vaseline gauze, and close the mucous membrane around the gauze with black silk. Place a gauze pack in the labio-gingival fold.

Pack the antrum for one week, remove packing, irrigate daily for one week and then twice a week. The oral opening into the antrum will usually close in three weeks.

The patient should not be allowed to sleep on the injured side for three weeks. A bandage around the head with knot on the side of injury will help to prevent turning on that side in sleep.

TREATMENT OF THE MENOPAUSE

WELCOME is any offering¹ with promise of relief at this time, especially welcome is a light in the dark places of endocrine therapy of this period.

One of the surprising results has been the demonstration that estrone can be applied on the skin in alcohol solution and that there is prompt and efficient absorption of the estrogen, while the alcohol evaporates quickly. I have repeatedly demonstrated that this method will control climacteric symptoms satisfactorily. In one case in which daily intramuscular administration of 10,000 units of estrone-1 had long been given, it was possible to transfer to the same dose of 10,000 units of estrone in alcohol on the skin. Later, as is the case with oral therapy, the dose was gradually reduced with continued control of symptoms. The application of from 5,000 to 10,000 units of estrogen daily to the skin of the abdomen for more than 28 months has led to no sign of any dermal change. The possibilities of surface application of estrogen are encouraging because of ease of application, ease with which the dose can be measured and greater efficiency per unit than by any other route of administration save oil injection.

Estrogenic therapy by the oral route is dependable. The choice of preparation to be used is largely a matter of price, save that it is not practicable to give estriol glucuronide in large doses. The mixed estrogens known now as estrogenic sub-

stances and estriol glucuronide appear to have an advantage per unit over the pure estrone, which is the chief constituent of the mixture. Estradiol is not better clinically and is costly. Price adjusted, one may use whichever preparation he prefers and get equally good control of climacteric symptoms.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

ARTIFICIAL PNEUMOTHORAX IN TUBERCULOSIS TREATMENT

ARTIFICIAL PNEUMOTHORAX is probably the greatest addition to tuberculosis therapy since the discovery of the cause of the disease. However, many physicians fail to consider that it is not a universal cure; and that in some cases it is unsuitable, in others unnecessary. A few sanatoria report as high as 80-90 per cent of patients receiving pneumothorax treatment, although in the opinion of most physicians of large experience in this field the treatment in the really minimal cases is not justified. In advanced disease the addition of collapse therapy to rest treatment has been instrumental in saving, or at least prolonging, many lives.

In the February issue of the *Journal of Thoracic Surgery* there is an article by R. G. Bloch *et al.* which covers rather fully the indications and contraindications for artificial pneumothorax. The authors emphasize that they are discussing the medical standards of the question only, and not variations in treatment which are frequently necessary from a public health standpoint.

According to these authors, the present rather widespread recommendations of collapse therapy in early, even minimal, tuberculosis is not justified, because the majority of such lesions will soon heal spontaneously, frequently without ever having been recognized and without any treatment whatever. The persistent presence of sputum positive for tubercle bacilli, even without x-ray evidence of cavity, means destruction of tissue and at least beginning cavity formation, but not all cavities are an absolute indication for this procedure. On rest treatment alone filled-up caseous areas frequently remain so permanently, all symptoms and bacilli disappearing. Such areas may be reabsorbed, may calcify entirely, or may split up into several calcareous areas. In the opinion of the authors thin-walled cavities in caseous tuberculosis often become distended because of the exertions of an active life, but quickly shrink on complete bed rest, and heal eventually by calcifi-

1. E. L. Sevringhaus, Madison, in *Jl. A. M. A.*, March 22nd

cation. The authors do not to imply that all such cavities should be expected to heal spontaneously, since tuberculosis once known to produce cavity should be under observation for many years, even with apparently complete clinical recovery. Often collapse therapy is indicated after a period of bed rest, even though a certain amount of spontaneous healing has been observed. The old, thick-walled, unchanging cavity demands a collapse procedure, for the patient can never be cured if the cavity remains open, but if collapse by air cannot be obtained in a reasonable time some other form of surgical collapse should be resorted to.

Artificial pneumothorax is not for extensive, acute pneumonic tuberculosis. These patients are as a rule very ill and can not properly expectorate the large amounts of sputum produced by the lung collapse. Furthermore, early collapse tends to increase the chance of bronchogenic spread of the disease with a resultant increased toxemia from the absorption of greater areas of caseating disease. Artificial pneumothorax should not be instituted until the process becomes localized and chronic with a reduction of the acute symptoms. Those having little opportunity to observe the pathologic changes and the natural healing processes of the disease may be imbued with the idea that artificial pneumothorax is applicable in almost every case. Spontaneous healing is frequently called by them exceptional and accidental. Experienced tuberculosis physicians know that such results are not exceptions, but are natural healing changes which cannot be followed in the collapsed lung.

In the authors' opinion the treatment by artificial pneumothorax preferable to all others is the combination of lung collapse with extended and supervised bed-rest. The practice of ambulatory pneumothorax treatment is deprecated as dangerous. Discontinuance of the regular work is often considered as adequate rest, but oftentimes not even this advice is given. Such management induces the patient to consider his disease as not a serious matter, and he looks upon the pneumothorax treatment as a sure cure. Wrong methods of tabulating the results of pneumothorax treatment are considered largely responsible for the over-enthusiasm for this method of treatment.

The medical aim of any treatment is the cure of disease, and the return of the patient permanently to his former life and work. The fact that a tuberculous patient returns to work symptom-free does not mean that he is cured. Freedom from symptoms and a gain in weight do not prove a cure, and oftentimes has no relation to the end

result. As long as a lung remains collapsed one cannot say that the patient is cured.

The authors' criteria for determining the curative results of pneumothorax treatment are: (1) restoration of the lung to full reexpansion; (2) adequate x-ray evidence of healing; (3) return of the patient to normal life, with (4) persistent absence of tubercle bacilli from the sputum; (5) persistent absence of all symptoms of activity, and (6) complete disappearance of all extrapulmonary complications. There is added as a final admonition: "Only after at least two years of satisfactory application of these criteria should a patient be considered as cured by the treatment."

SUMMARY

1. Indications for artificial pneumothorax should be more clearly defined.
2. The tuberculous cavity is the most important factor in the indication for collapse therapy.
3. At least two years should elapse after re-expansion of the lung before considering a patient cured.
4. Rest with collapse is a necessity.
5. Surgical collapse should follow as soon as failure of pneumothorax to close cavities has become evident.

DENTISTRY

J. H. GUION, D. D. S., *Editor*, Charlotte, N. C.

THE DEVITALIZED TOOTH: A FACTOR IN OPHTHALMOLOGY

SOME under- and some over-estimate the importance of dental infection in causing disease elsewhere. Here¹ is a fair appraisal.

Dental sepsis is responsible for much ill health in other parts of the body.

Acute tonsillitis, acute and chronic cervical adenitis, Ludwig's angina, retropharyngeal abscesses, acute parotitis, acute, subacute and chronic laryngitis—all of these might well result from dental sepsis.

The sinus most frequently observed to harbor infection is the maxillary antrum; many cases of pansinusitis are also traceable to a maxillary empyema. Hayfever and allergic rhinitis are caused by irritating discharges from an infected maxillary sinus which renders these membranes sensitive to almost any inspired irritant. Many of these patients have been greatly relieved, if not entirely cured, by the removal of infected teeth.

Endotoxins absorbed into the general circula-

1. B. H. Palmer, Miami, in *Jl. Fla. Med. Assn.*, Mar.

tion have produced a direct effect on the ciliary muscles, thereby weakening the accommodation, causing headaches and general nervous instability.

Many cases of chronic conjunctivitis result from dental sepsis, upward through the nasolacrimal duct into the lacrimal sac and canal.

Blepharitis marginalis, and not infrequently some types of corneal ulcerations, may continue in activity as long as a devitalized tooth remains. Obstinate cases of traumatic iritis are so often traceable to dental sepsis. In case after case lesions of various types were traceable to devitalized teeth which roentgenographic studies had shown to be apparently uninfected.

Some permit devitalized teeth to remain in and suffer no dire consequences therefrom; yet the general health, vigor and vitality of even these people might be greatly improved were they rid of them.

The experience of a vast number of ophthalmologists have proved that devitalized, pulpless teeth play an important part in certain diseases of the eye.

SUBDURAL HEMATOMA—Pitts

I was particularly interested in Dr. Masters' case which had as the most prominent feature mental change. I think one can't stress that point too much, for it is probably the most constant change.

The other point about the early onset of signs of compression coming within 48 hours is well taken. At that stage, the situation is confusing. It is difficult to recognize hematoma at that time or to differentiate it from cerebral edema. That is where air studies are of the most value. One very rarely finds a shift of the ventricular system produced by cerebral edema. When present, it is never as marked as that produced by subdural hematoma, and one does not find the obliquity of the third ventricle which is associated with subdural hematoma.

The other point about the triviality of the injury: There is a case reported from the Brigham Hospital, in which there was no history of trauma other than the fact that the patient was a tinner, accustomed to lifting trap doors in the attics with his head instead of with his hands. However, I might say that in all neurological clinics about once a year a patient is admitted without a history of trauma, with signs and symptoms of intracranial pressure without localization. The patient is taken to the operating room for ventriculography to localize a would-be brain tumor and to the surprise of all concerned, an unsuspected subdural hematoma is encountered.

POSTOPERATIVE DISTENTION—Linton

tion in major orthopedic work—as in the scoliosis cases which have been bent far laterally in the wedging jacket before the spinal fusion. The thing that gives us the most distention is hyperextension of the spine—as in head traction, in treatment of compression fractures, and after spinal fusions. I have had a spinal fusion myself and felt as if I could just sit in the flexed or jackknife position a while my distention would have been relieved—and such is the case; for when we decrease hyperextension or flex the spine distention is decreased. I have used this drug in a few cases with gratifying results.

DR. DONALD DANIELS, Richmond: I am glad Dr. Linton brought us this paper. I agree fully that prostigmin is certainly a wonderful adjunct in postoperative ileus. I think, though, that we should be very careful in using prostigmin, particularly in cases of intestinal obstruction before you decide what the cause is. If you operate for carcinoma around the proximal gut, it makes a patient much worse to give prostigmin. If you have positive ileus, you may have postoperative trauma. Sometimes with the slightest provocation you can have an embolus, regardless of how good the surgery. I have seen tremendous ileus following an eye operation, following nephrectomy or even broken back. Putting a patient in a cast will give ileus or paralysis of intestines. A man is by nature a person of habit. When we are young it takes three or four years to break us from wetting the bed. It might be a good idea, and I have used it occasionally when selecting operative patients, to teach patients to void lying down. I find that lots of them can learn to void before they are operated on when it is not an emergency. That helps quite a lot. Dr. T. E. Lind, of Baltimore, started using some mercurochrome postoperatively. He claims that cuts down a bit of bladder discomfort and causes voiding to be much easier.

DR. LINTON (closing): I wish to thank Dr. Dawson for his remarks on using the drug from an orthopedic point of view and Dr. Daniels for his emphasis on the need for learning to void before operation. That is a point of value. It seems most logical. I noticed just the other day an article which stated that the giving of prostigmin in cases in which peritonitis was anticipated or present was debatable, but we have had no bad results by giving it.

Dr. White makes me indebted to him for one more kindness. He was one of my chiefs. If I have absorbed but little, it was not because I was not exposed to a great deal.

USE OF DIURETICS IN THE TREATMENT OF CERTAIN LOCALIZED EDEMAS

(M. A. Schnitzer, Toledo, in *Ohio State Med. J.*, April)

Twelve cases of localized edema of an extremity are reported. These include obstructive, traumatic, inflammatory, and thrombophlebitic edema, and swelling of the arm following radical amputation of the breast. The cases were selected on the basis that cardiac or renal factors played no part in the cause of the edema. Eight of the 12 patients responded very satisfactorily to one or several injections of 2 c.c. mercupurin intravenously alone. Two patients required acid-salt preparation with ammonium chloride, after which they responded fairly well to the mercurial diuretic. Another patient did not respond at all, which is explained probably by the chronicity of the edema with resulting induration. One patient had complete subsidence of edema by elevation alone of the part.

This method of treatment is simple and seems to be quite effective in the control of acute edema of an extremity, irrespective of the cause. The method consists in elevation of the extremity to allow the full effect of gravity, followed by the intravenous injection of a mercurial diuretic, either salyrgan or mercupurin.

Ammonium chloride has been shown to be a distinct adjunct in the use of salyrgan. In this study it was observed that with mercupurin (salyrgan with theophylline) a satisfactory diuretic response could be obtained frequently without the preliminary administration of ammonium chloride.

INTERNAL MEDICINE

GEORGE R. WILKINSON, M. D., *Editor*, Greenville, S. C.

THE PROBLEM OF ESSENTIAL HYPERTENSION

RARE is the day on which some patient does not ask you about his blood pressure. A fair statement¹ of our knowledge of this state is condensed for helping you to answer these questions.

Normal arterial blood pressure may be the result of cardiac output, peripheral resistance (arteriolar) and arteriolar tonus.

It has been surmised that at the onset the peripheral resistance has been increased by spastic constriction of the arterioles in a large area; *i.e.*, possibly the splanchnic area, with the result that the heart must beat with greater force to overcome this resistance; the result is a rise in blood pressure.

If the elevation in b. p. continues, it is conceivable that the tonus of the arterioles would increase and the heart muscle would have to hypertrophy in order to be capable of maintaining an elevated b. p.

Apparently in the earlier stages of hypertension, Nature makes these automatic adjustments so gradually and effectively that the individual is unaware of his altered cardiovascular condition until the systolic blood pressure is found to be 160 to 200 mm. At this stage the individual may be without symptoms or other signs. The heart may be normal in size, the urine free from albumin and casts and the blood metabolites, urea and chlorides at normal levels.

This pressure may become arrested at this level and the patient live for years, especially if the diastolic pressure remains relatively low. Or the arterial pressure may continue to rise; but, as long as the heart remains competent and is able to counteract the arteriolar resistance, symptoms are minimal or absent. Eventually comes dizziness, headache, ringing in the ears, palpitation, slight dyspnea on effort, a sense of weight in the chest, nose bleed and mental irritability and such patients come with severe symptoms, notably cardiac, cerebral or gastric.

Essential hypertension is the most important type. Bell estimated to be responsible for at least 15% of all deaths after the age of 50.

"Essential hypertension is a functional disorder, of unknown cause, characterized by a progressively increasing elevation of both systolic and diastolic blood pressure; the mechanical strain of the

high arterial tension produces changes in the heart, and in the arteries, especially the arteries of the heart, brain, and kidneys, often with fatal result." (Mosenthal.)

There is a tendency for essential hypertension to be transmitted from one generation to the next. In its inheritance it follows the Mendelian law and is a dominant characteristic.

Vladimir Stefansson spent the better part of a decade in the Arctic. While there, he lived on an exclusively meat diet. For one continuous period of nine months he ate nothing but meat. Yet Liebfeld found Stefansson to be in perfect physical condition, heart, blood, blood chemistry, and urine normal, b. p. 115/55.

All kinds of smoked and preserved meats and fish, cheese and cream cheese, baker's bread and all cake and pastry contain salt, prepared cereals, canned fruits and vegetables containing salt, most kinds of molasses and syrup, salted butter—all are to be denied.

A small minority of patients on such a salt restriction within one to two days may have marked prostration, anorexia, nausea, perhaps vomiting, headache and pain in the calves of the legs, the heart action may be weak and irregular. Given two grams of sodium chloride in soup or plain water, symptoms are cleared up like magic in a few hours or within 24 hours. If the symptoms persist, they are due to other causes.

Blood pressure in practically all people varies greatly from hour to hour and day to day, a fact to be borne in mind when considering a diagnosis of hypertension. Patients with essential hypertension exhibit wider fluctuations than those with normal pressures. Rest in bed often has marked lowering effect on blood pressure.

Malignant essential hypertension is merely a terminal phase of the disease, in which the process of hyaline degeneration and vascular sclerosis, even vascular necrosis, is for some reason greatly speeded up.

Cases with *diastolic* level below 100 mm. usually need very little treatment. Where blood pressure elevation is discovered accidentally, the patient should be told that he has a slight elevation of blood pressure which may be of no significance and asked to return for further observations.

If the elevation be present at the second visit, an investigation into the patient's family history should be made, and inquiries as to strain or anxiety in domestic or business life. If the patient is accustomed to take large quantities of liquids and use salt heavily, restriction along these lines and effect noted. Phenobarbital or bromides quiet and

(Hypertension P. 228)

1. C. N. Hensel, St. Paul, Minn., in *Jl.-Lancet*, Mar.

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THE TREATMENT OF CHRONIC INDIGESTION

WHEN most of us were medical students indigestion was a term tabooed. Now, greatly through Alvarez's influence, it is back with us. The article¹ here abstracted deals helpfully with a great problem.

The essayist says his is a misnomer, for true indigestion is seen only in sprue, celiac disease, carcinoma of the pancreas, and similar conditions. This discussion is of the management of chronic abdominal distress rather than indigestion.

The history should include an appraisal of the social status of the patient, of his adjustment to his environment, and the possible role of emotional factors in his complaints. One must think not only of diseases of the abdomen but of pulmonary tuberculosis, thyrotoxicosis, migraine, brain tumor, pelvic inflammatory disease, and so on.

Peptic ulcer is always to be suspected, and is to be diagnosed or excluded on the basis of the history and laboratory examination and studies with the x-ray and perhaps the gastroscope. The x-ray examination of the stomach can almost never be omitted in the examination of a patient with chronic abdominal distress. The report of the roentgenologist must present the evidence. It is not possible for the gastroscopist to photograph the picture he sees, but he must describe it clearly. The treatment of peptic ulcer is primarily a medical problem.

Gastric cancer causes more deaths than any other neoplasm of the body. The symptoms are most insidious in onset and most indefinite. Any individual over thirty who develops indigestion should be examined for cancer, have an analysis of the stool for occult blood and a roentgenologic study of the digestive tract. Some means must be found for reducing the cost of the x-ray examination in order that it may be used as routinely in the diagnosis of digestive disease as the Wassermann test is used in the diagnosis of syphilis. The public must realize that cancer can be diagnosed early and that surgery offers hope of cure.

There has been great discussion lately of "gastritis." By and large it is not of great practical significance. Atrophic gastritis is related to achlorhydria, to pernicious anemia, and very likely to carcinoma of the stomach. Aside from the improvement which seems to occur often in cases following the administration of liver, or liver extract, or ventriculin, there is no therapy.

1. W. L. Palmer, Chicago, in *Jour. Kansas Med. Soc.*, (Mch.)

There is no evidence that chronic distress may be attributed to disturbances in emptying of the otherwise normal gallbladder. The one important thing to know about the gallbladder is whether it contains stones or not. The roentgenological diagnosis of cholelithiasis is highly accurate. The important question to ask of patients found to have gallstones is, Does the patient have biliary colic? Diet and various medicines are of little avail. The one satisfactory treatment of cholelithiasis is cholecystectomy. In the absence of biliary colic, fullness, belching and generalized abdominal discomfort is probably not related to the gallbladder at all, but is a bowel disturbance which may be corrected by regulation of the diet and bowels. The distinction between cholelithiasis and biliary colic on the one hand, and chronic cholecystitis and gallbladder dyspepsia on the other hand is important. Biliary colic should be treated surgically; the dyspepsia is probably not related to the gallbladder at all and can be handled satisfactorily by medical measures. Biliary dyskinesia or spasm of the sphincter of Oddi—if the condition occurs at all, is of little clinical significance.

Recurrent appendicitis is an indication for appendectomy. However, appendectomy is not likely to cure those individuals who have chronic, daily-recurring abdominal distress even though it be fairly well localized in the right lower quadrant. Many such patients have regional ileitis. Fortunately, the terminal ileum is the portion of the bowel most frequently involved and can be examined easily roentgenologically. When higher portions of the bowel are affected the diagnosis may be quite difficult. Resection of the diseased portions of the bowel is indicated. However, the disease often recurs following resection; therefore the patient should be given a long period of rest, high-calorie diet, and general care such as one would give to a patient with tuberculosis. Rest is very important, preferably bed rest for a long period of time—until the proctoscope shows the rectum to be normal. In the more severe cases the patients find it difficult to eat adequate amounts and the parenteral administration of vitamins may be indicated. Blood transfusions are often of great value, particularly if anemia is present. In some patients who continue to have diarrhea for many years, ileostomy may be indicated, or even total colectomy. Both of these procedures are hazardous and should be undertaken with great reluctance. In the acute fulminating cases, surgery and indeed all other measures are of little avail. In the general management of ulcerative colitis psychotherapy is of the utmost importance. Every possible effort must be made to build up the

morale. Phenobarbital is of considerable value. Belladonna is helpful. A hot-water bottle or an electric pad on the abdomen is usually soothing. Narcotics may be necessary for severe pain, but in the absence of pain are best omitted. Bismuth, kaolin and similar powders are of little value. The vaccines offer no specific help.

Chronic amebic dysentery is usually differentiated easily by the demonstration of *Entamoeba histolytica* in the stool. If any doubt exists, therapeutic trial is indicated. Emetin intramuscularly, 1 gr. daily for 10 or 12 days combined with the use of yatren or vioform is very satisfactory. Carbo-sone and other arsenical drugs are of value but occasionally give an arsenical dermatitis. Lymphopathia venereum is seen as a stenosing lesion of the rectum. The Frei test is quite reliable.

Carcinoma of the colon should always be suspected in patients with abdominal distress. It is usually found readily by x-ray examination. However, it may be easily overlooked, often because the examiner fails to manipulate the loops of sigmoid free from each other. The continued presence of gross blood in the stool is very significant. Repetition of the examination may lead to the finding of the lesion. Proctoscopic examination is particularly valuable in carcinomas of the rectosigmoid.

Diverticulitis of the colon is not infrequent in patients having recurring attacks of acute lower left quadrant pain, tenderness, some rigidity and fever. Usually the attacks subside with rest, the application of heat to the abdomen, and regulation of the bowel by means of diet. Belladonna and phenobarbital are helpful. Diverticulosis is common, but few develop the acute attacks of diverticulitis.

The great majority of patients with chronic abdominal distress will be found to have no organic disease to account for their distress. They have fullness or discomfort after eating, rumbling, gurgling and soreness of the abdomen, and very often cramp-like abdominal pain. There is usually a tendency to diarrhea, or the patient may be constipated. After organic disease has been excluded, the abdominal discomfort can usually be relieved by regulating the bowels so that normal, formed movements are obtained without the use of laxatives. Start off with a diet of cereals, custards, puddings, eggs, rice, macaroni, cheese, bread, butter, milk, cream, potatoes and a stipulated amount of cooked fruit and vegetables, to be increased if necessary. Very often the patient is benefited by being instructed to lie down for an hour after each meal.

The majority of patients with psychoneuroses

and functional abdominal distress are relieved by such procedures, and by the reassurance which comes both from the knowledge that organic disease is not present, and from the relief of distress. If such measures do not suffice, usually the diagnosis is incorrect, or emotional factors are found to be overpowering.

The author does not believe that allergy plays an important role in chronic abdominal distress.

THE GENERAL PRACTITIONER IN THE CURE OF CANCER

A GENERAL PRACTITIONER intelligently outlines the duties and responsibilities of the general practitioner in regard to cancer¹. Persistent effort along this line can not fail to greatly reduce the death rate from this scourge.

There must be an unyielding insistence that our patients submit to such examinations as will clear up the diagnosis of questionable signs or symptoms. Whether this be done by means of biopsy, or with the aid of the roentgen ray; whether it necessitates the use of the bronchoscope, the esophagoscope, the laryngoscope, the proctoscope, or the vaginal speculum, the patient must be brought to see the necessity for the procedure. The general practitioner must find words to explain the need.

The people generally have been brought to suspect that ill-healing skin blemishes or lumps in the breast or bleeding from the rectum or vagina may mean cancer. The essayist has found the question "I suppose you are worrying about cancer, aren't you?", helpful while taking a history. When the answer is "Yes," the way is open for saying, "That being the case, we must leave no stone unturned to discover the truth;" adding, "but even should it be cancer, it surely is an early one which can be cured." While the second part of this quotation may be pure casuistry, it is fair, because it gives hope, and allays fear. If the cancer is probably incurable, even though the sufferer is suspicious, it may be well to mislead. If curable the patient should be told; which indeed a large majority insist on if given the chance; for there is necessity for follow-up examinations.

The family doctor will need to keep himself informed regarding the various methods of attack. In New York State cancer has been made a reportable disease. Thus we will eventually discover the outcome following different types of treatment; the length of time elapsed from appearance of first symptoms until the patient reported to a physician; the length of time before proper diagnosis

was made, once the patient did report; and the names of all physicians entering the picture in each case.

Ten aids are offered that may suggest ways of preventing disasters:

A nodular goiter has no place in the neck.

A bowel which functions normally for years, then suddenly changes this habit, demands investigation by digital rectal, sigmoidoscopic, or gastrointestinal x-ray examination.

It is disquieting to have another do a biopsy on the cervix which you have cauterized and tamponed for 6 months, and find a grade-2, or -3 epithelioma.

What chagrin to be called to see the mother who has been a regular office-caller for years, only to learn that an abdominal pain which is accompanied by a mass in the abdomen, turns out that day to be a ruptured malignant cystadenoma of the ovary!

How sleep well when a mass can finally be felt in the epigastrium of a man you have given casual treatment for his indigestion for years without one x-ray examination of his stomach?

The ointment-treated chronic ulcer which finally calls for iodex treatment of the regional enlarged gland, is also a cause for chagrin, if possible.

The woman who bleeds after her delivery, more and more profusely; who is given ergot and/or pituitrin, until her lungs protest by spewing out the blood of a metastatic chorionepithelioma, is not a good picture to sleep on.

Nor the elderly lady whose vulval leukoplakia is seen, but not recognized as a precursor of malignancy.

When there is a family history of carcinoma of the breast, it is well not to administer estrogenic substances to a woman of that family.

VIRUS INFECTIONS

VIRUSES are commonly thought of as mysterious things. A good many doctors are skeptical about viruses as the cause of diseases. An authoritative presentation¹ on this subject emphasizes the fact that certain viruses are as well established to be the causes of certain diseases as are certain bacteria to be the causes of certain other diseases, and summarizes the knowledge to date of these morbid agents.

In 1898, it was discovered that tobacco mosaic is produced by an agent capable of passing through earthenware filters, impervious to ordinary bacteria. Shortly following this, numerous

1. F. S. Wedderell, Syracuse, N. Y., in *Southwestern Med.*, Mar

1. T. M. Rivers, New York, in *Bull. N. Y. Acad. of Med.*, April

agents, including those causing smallpox and vaccinia, were shown to pass such filters and to be so small that it was impossible to see them by means of ordinary microscopes.

As soon as this group of viruses was recognized, there arose lengthy discussions regarding their nature and the character of diseases produced by them. Among these to which man is subject are smallpox, yellow fever, measles, chickenpox, poliomyelitis and several kinds of encephalitis. Even the useful bacteria, without which life of all forms would quickly become extinct, are subject to their own virus disease.

The diameters of these virus particles range from 250 *mu* to 8 *mu*. Those of poliomyelitis, because of their small size, will never, it is said, be resolved by means of ordinary light.

It has been shown that there are several antigens associated with vaccinal infections and that they probably derive from the virus. It appears that there are at least two soluble antigens, one heat-stable, the other heat-labile, which occur separately or as a complex. In addition at least two others, an agglutinin and a substance that gives rise to neutralizing antibodies following an infection with the virus. No virus has as yet been induced to multiply in the absence of living host cells. In virus diseases the inflammatory reaction is usually characterized by a great increase in mononuclear cells.

Although viruses often attack more than one kind of cell, the clinical pictures produced by them are usually consistent, but all virus diseases can be diagnosed without the aid of laboratory techniques.

One goes about diagnosing virus diseases just as other infectious maladies. One attempts to isolate and identify the virus responsible, employs living media, small laboratory animals, developing chick embryos, or modified tissue cultures; and turns for aid to agglutinations, precipitin reactions, complement-fixing reactions, and neutralization or protective tests.

About 40 years ago it was shown in regard to virus disease, *e.g.*, in the case of smallpox and vaccinia, that serum from a convalescent animal mixed with the virus responsible for the malady protects a susceptible individual.

Although we had a few bacterial sera and antitoxins, the treatment of bacterial infections until recently was largely expectant. Chemotherapy in the last few years has changed the whole picture. As yet, however, no great advance in this direction has been made in the virus field; however, this seems to be the most likely source of curative agents for this type of malady.

Most of the virus diseases have been treated by immune sera, but the results have not been encouraging. Serotherapy of the diseases caused by these agents is not likely to yield desired results. Since antibodies do not enter cells, and the viruses are intracellularly situated, it is impossible for the antibodies in therapeutic sera to reach the infectious agents. A good deal of evidence exists which indicates that in most virus diseases, by the time signs and symptoms of infection are manifest, all of the cells that are going to be infected in that particular host have already been entered.

Spread of the majority of virus diseases of man seems to be accomplished through contact or by means of droplet infection. In the prevention of virus diseases there is little to offer except quarantine measures, and several convalescent sera. Most of these quarantine measures seem useless. It is doubtful whether measles, chickenpox, poliomyelitis, influenza and smallpox are influenced in the least by the quarantine measures.

Perhaps in Horsfall's recent work with influenza and distemper there lies a method of preventing influenza. Tests of this influenzal vaccine are now under way, but it will be some time yet before an answer will have been obtained. There is every reason to suppose that eventually many more virus diseases will come under control through the use of properly prepared vaccines.

In spite of the facts that viruses are invisible, that they multiply only in living susceptible host cells, that all of them may not be alike in nature, and that some are crystalline proteins, the problems resulting from the invasion of a single host by a virus or from epidemics of virus diseases, and the general principles underlying methods of solving these problems are similar to those encountered in other infectious fields.

Apparently influenza is more than one disease.² Probably different influenzas may bear a relationship to one another somewhat like that of typhoid to paratyphoid fever.

The symptomatology of epidemic influenza has for centuries presented an amazing uniformity. The frequency of the recurrences in adult populations indicate that either immunity is of brief duration or that serologically divergent strains of virus are disseminated in different outbreaks, and that the strains vary in virulence and infectivity. Influenza virus was isolated in 1933 by Smith, Andrewes and Laidlaw.

Serum of a ferret recovered from infection neutralized other strains of virus and mice vaccinated with one strain have proved immune to other strains.

² 2. Thos. Francis, Jr., New York, in *Trans. Col. of Phys. Phila.*, Feb.

Strains of the same virus can be differentiated serologically; they are, nevertheless, closely related through possession of common antigens. Diagnostic tests with one strain appear capable of detecting infection with another. Strains from the same epidemic tend to exhibit similar serological features. Immunization with one strain may not, under certain conditions, give rise to complete immunity to all strains. Whether these serological variations are sufficiently great that one strain may become epidemic in a human population immune to another is not yet known.

It has been suggested that the term, Influenza A, be applied for identification of this disease caused by strains of the aforementioned virus derived from human sources.

A widespread epidemic of influenza occurring in the early months of 1936, in which 35 to 40 per cent of the population was attacked with an unusual preference for those persons under 20 years of age, has been called Influenza B. One can seriously question whether cross immunity obtains between Influenza A and Influenza B.

As measured by the complement-fixation reaction, infection with one strain of Influenza A virus gives rise to antibodies which reach uniformity with all strains of that virus and with swine influenza virus.

The two large outbreaks of Influenza B in 1936 and 1940 began in the early months of the year, while the tendency of the 4 epidemics of Influenza A in alternate years since 1932-33 has been to gain momentum in November or December. One might suggest, therefore, that Influenza A recurs biennially while Influenza B is a quadrennial croup. In any case, the two diseases appear to travel independently, although indications exist that they may occur simultaneously or continuously.

In 1936 an entirely different virus was encountered and repeatedly isolated; this virus was recovered from ferrets which had received throat washings of patients at that time. Its identity was not established.

It has been seen that variations in the clinical severity of the disease have been associated with quantitative differences in the pathogenicity of the associated strains of virus; that within the confines of what has been called Influenza A significant immunological differences in the strains of that virus occur. Moreover, at least two widespread epidemics of influenza have been found to be caused by a virus which is sufficiently distinct serologically as to establish it as entirely different virus. It is obvious, therefore, that there are fundamental differences in the causative agents of epidemic recurrences and that these differences are of primary significance for an understanding

of immunity and the development of prophylactic measures.

NEWS

MEETING OF THE NORTH CAROLINA NEURO-PSYCHIATRIC ASSOCIATION AT DUKE HOSPITAL March 28th

This meet was with Dr. Raymond S. Crispell, of the hospital, as chairman of arrangements and program. An attractive feature was an inspection of the new out-patient and in-patient psychiatric clinics of Duke Hospital and with demonstrations of electroencephalographies. This was followed by a scientific meeting in the hospital amphitheatre, with a paper on Electroencephalography by Dr. Hans Loewenbach, on The Rorschach Tests by Dr. Edward Stainbrook, both of the psychiatric staff of Duke Hospital. Dr. W. P. Beckman, of the Columbia, S. C., State Hospital, spoke on Problems and Progress in Mental Hygiene in South Carolina. The last presentation of the meeting was by Dr. Walter Freeman, of Washington, D. C., on Indications, Procedures and Results in Prefrontal Lobotomies. Dr. Freeman has had great experience with this new and unusual form of treatment, and his investigations have revealed much concerning the function of the prefrontal lobes of the brain, and the nature of certain mental diseases.

There are fifty-six active members of the North Carolina Neuropsychiatric Association, all of whom are practicing physicians in North Carolina, members of the North Carolina Medical Society and engaged or interested in the treatment and prevention of mental and nervous diseases. In addition, among the fifteen honorary members are distinguished physicians from North Carolina and distinguished neuropsychiatrists from outside the State who have made contributions to the Association and to Neuropsychiatry in North Carolina. The Association has been meeting regularly since its organization in January, 1935. The score or more meetings since this time have been held in various parts of the State, from Kinston in the east to Asheville in the west.

Among the aims and functions of the Association is the extension of the latest knowledge concerning mental and nervous diseases, not only to its own members, but to the medical profession at large. In addition, the Association has always been interested in the application of Neuropsychiatry and in the prevention, as well as the treatment, of mental and nervous diseases and in the closely related and applied subject of mental hygiene. A paper bearing on some aspect of mental hygiene is usually included on every program. The North Carolina Neuropsychiatric Association has always been so constituted that it can at any appropriate time become a section on Neurology and Psychiatry of the North Carolina Medical Society. This has been discussed at various times since the organization meeting in 1935, but so far it has been thought that it was not advisable to do this and that the points of view and the information and knowledge concerning Neuropsychiatry and mental hygiene could best be communicated to the medical profession in North Carolina by the participation of the neuropsychiatrists in the general sessions and in the meeting of the various special sections of the State medical society. The Association is usually extended the privilege of having a paper read at the general session of the meeting of the State society either by one of its representatives or by some visiting neuropsychiatrist. Advantage has usually been taken of this privilege each year.



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The past presidents of the Association have included: Dr. Ernest Poate, Dr. John McCampbell, Dr. Raymond S. Crispell, Dr. Julian Ashby, Dr. James Vernon and Dr. W. D. Hall. During the first few difficult years of organization Dr. Sylvia Allen was the secretary-treasurer of the Association. She was followed by Dr. Claude Bozeman.

The officers of the Association for 1940-41 were: President, Dr. Mark A. Griffin, of Asheville; Vice-President, Dr. Archie A. Barron, of Charlotte; Secretary-Treasurer, Dr. Malcolm Kemp, of Pinebluff. The officers elected at the recent March meeting or the ensuing year were: Dr. Archie A. Barron, President; Dr. Frank B. Watkins, of Morganton, Vice-President; Dr. R. Burke Suitt, of Durham, Secretary-Treasurer. At the last meeting ten new active and three new honorary members were elected.

While the meeting in the Duke Hospital amphitheatre on March 28th was of a somewhat technical and scientific nature, it was open to all of the medical profession, also to a few interested laymen. There was an attendance of over one hundred, and the meeting was concluded with a collation at the home of Dr. Crispell on the West Duke campus.

THE AMERICAN ACADEMY OF PHYSICAL MEDICINE will hold its Nineteenth Annual Meeting on April 28th-30th in New York, headquarters at the Hotel Pennsylvania. Clinics will be held at the Medical Center, the New York Orthopaedic Hospital, the Post Graduate Hospital, and the Skin and Cancer Hospital. There will be an evening session at the Academy of Medicine Building and a banquet at the Hotel Pennsylvania.

Physical medicine in relation to general medicine and the specialties will be the underlying theme of the topics under discussion. These include new developments in electrotherapy, electrosurgery, radiation therapy, hydrology, physical education, military medicine, aviation medicine, and laboratory reports on related investigation.

All members of the medical profession and those of

related interests are invited to attend the scientific program. There will be no registration fee. Address inquiries to Herman A. Osgood, M.D., Secretary, 144 Commonwealth Avenue, Boston.

DR. L. R. O'BRIEN, JR., for more than a year a member of the staff of the Davis Hospital, Statesville, has gone to Lynchburg to be associated with Dr. Don Preston Peters in the practice of surgery.

DR. FINLEY GAYLE, JR., Richmond, is a member of the recently-appointed National Advisory Council on Nervous and Mental Diseases.

DR. P. P. MCCAIN, Supt. of the North Carolina Tuberculosis Sanatorium, made an address to the Virginia Tuberculosis Society, at a meeting held at Richmond, March 13th.

DR. JULIAN L. RAWLS, Norfolk, is the new president; and Dr. Frank S. Johns, Richmond, the new vice president, of the Southeastern Surgical Congress.

MARRIED

Dr. Edwin L. Kendig, Junior, of Victoria, Virginia, and Miss Emily Parker, of Appalachia, Virginia, on March 22nd. Dr. and Mrs. Kendig will make their home in Richmond.

DEATHS

Dr. L. H. Lewis, of Elkton, Va., died suddenly at his home March 8th.

Dr. Jesse Armed Strickland, who once practiced at Zebulon, N. C., and later conducted a hospital at Norfolk, died at St. Petersburg, Fla., March 14th. Dr. Strick-



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land was graduated by the University of North Carolina Medical School in 1910. He had practiced a number of years at St. Petersburg.

Lt. Colonel John C. Dye, 56, retired, formerly of Statesville, died in the United States Veterans Hospital in Fayetteville, March 13th. Dr. Dye was a graduate of Oak Ridge Academy, Davidson College, the North Carolina Medical College, Charlotte, and the Post-Graduate Hospital in New York. After completing his internship he became a member of the staff of St. Luke's Hospital in Fayetteville. In 1908 he moved to Statesville and specialized there in eye, ear, nose until he entered army medical duty in 1917. After the World War he remained in the army until he was retired about three years ago. He had been in ill health for a number of years.

UNIVERSITY OF VIRGINIA

On March 11th, Dr. Oscar Swineford, Jr., addressed the South Carolina Medical Society, meeting in Charleston. His subject was The Management of Asthma. At a meeting of the Tidewater Technicians' Society at Newport News on March 12th, he discussed Observations on Immunology.

The Virginia Section of the American College of Physicians met at the University of Virginia on March 13th. The following program was presented: Drs. Dudley C. Smith and Walter Herold spoke on Gonorrheal Keratosis; Drs. Andrew D. Hart, Jr., and Ralph B. Houlihan discussed Haverhill Fever Following Rat Bite; Dr. Staige D. Blackford presented a paper on Abnormal Cholecystograms: Developments in Ninety Untreated Patients; Drs. Edwin P. Lehman and George M. Lawson discussed Clinical and Bacteriological Studies with Sulfamylguanadine; and Dr. Gilmore Holland spoke on Electroencephalographic Studies in Myoclonia.

On March 17th to 20th, Dr. Fletcher D. Woodward

gave a series of Postgraduate Lectures before the Dallas Southern Clinical Society. His subjects were: Fractures of the Face and Sinuses; Diseases of the Nasopharynx; Treatment of Acute and Chronic Ear Infections; Treatment of Sinusitis; and The Value of Chemotherapy in Otitic Infections. At the meeting of the Academy of Medicine in Houston on March 21st, he discussed the Treatment of Certain Malignancies of the Nose, Throat and Larynx.

MEDICAL COLLEGE OF VIRGINIA

On February 24th, Dr. F. M. Hanes, Professor of Medicine at Duke University School of Medicine, addressed the University of Virginia Medical Society on Sprue.

At the meeting of the University of Virginia Medical Society on March 7th, Drs. Walter Freeman, Professor of Neurology at George Washington University School of Medicine, and James Watts, Associate Professor of Neuro-Surgery at George Washington University School of Medicine, spoke on the subject, Prefrontal Lobotomy in Mental Disorders.

On March 10th, Dr. E. P. Lehman spoke before the Norfolk Academy of Medicine on the subject, The Problem of Acute Hematogenous Osteomyelitis.

On March 7th, Dr. Oscar Swineford, Jr., participated in the Postgraduate Course in Medicine and Surgery for the Elizabeth City County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Chronic Rheumatism. On March 14th, Dr. J. Edwin Wood, Jr., presented a lecture before this Society on Cardiac Irregularities.

On March 14th, Dr. Walter E. Vest, of Huntington, West Virginia, spoke on Some Medical Aspects of Shakespear. Sponsored by Phi Beta Pi Medical Fraternity.

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graduate clinics are scheduled for April 24th and 25th. Dr. Alfred Blalock, of Vanderbilt University, will give the lectures. In connection with the lectures the ex-internes of the hospital division of the college will hold their annual reunion.

Drs. M. H. Bland, H. G. Byrd, W. L. Nalls, Lewis E. Jarrett, P. S. Richards, W. Cardwell, R. C. Cecil, L. B. Todd, R. L. Clark, Jr., J. C. Parker, A. E. Powell, A. B. Croom, Jose Bou Lopez, M. J. Hoover, Jr., and Walter E. Vest, Jr., were recently initiated into Alpha Omega Alpha, honorary medical society. Dr. William T. Sanger, president, was made an honorary member of the society.

SALES TAX ON BLOOD!

Denver—Tax collectors have often been called blood-suckers, sometimes in jest and sometimes in earnest. At last they are taxing blood itself.

New regulations issued by the sales, service and use tax division of the Colorado state treasurer's office decree:

"Blood is in some instances obtained, classified, stored and sold in a manner similar to other items of tangible personal property, by what are usually termed 'blood banks.'

"Where this item is handled in this manner and dealt with at a definite commercial price, and purchased from a person or persons engaged in the business of selling such item, the sale shall be deemed to be the sale of tangible personal property, and subject to the sales tax."

BOOKS



FIRST AID IN EMERGENCIES, by ELBRIDGE L. ELIASON, A.B., M.D., Sc.D., F.A.C.S., Professor of Surgery, University of Pennsylvania School of Medicine. Tenth edition completely revised and reset; 126 illustrations. J. B. Lippincott Company, Philadelphia; Montreal; London. 1941. \$1.75.

This book is intended to meet the needs of firemen, life-guards, sailors, boy scouts and the like. This edition has been thoroughly revised to carry the latest information. The book serves its purpose of supplying instructions for certain groups especially likely to witness need for first aid. It might be well for most practitioners to read it, and so keep from being embarrassed at having boy scouts meet health emergencies with more skill than we are able to display.

THE 1940 YEAR BOOK OF GENERAL THERAPEUTICS, edited by OSCAR W. BETHEA, Ph.M., M.D., F.A.C.P., Professor of Clinical Medicine, Tulane University School of Medicine; Senior in Medicine, Southern Baptist Hospital; Senior Visiting Physician, Charity Hospital; member of the Revision Committee of the U. S. Pharmacopeia. 1930-40. The Year Book Publishers, Inc., 304 S. Dearborn St., Chicago. \$2.50.

No doctor should undertake to do for patients without keeping informed on all advancements in treatment. This yearly review of therapy offers the best and cheapest means of accomplishing this end.

TECHNIQUES OF CONCEPTION CONTROL, by ROBERT LATOU DICKINSON, M.D., Formerly President, American Gynecological Society, and WOODBRIDGE MORRIS, M.D., General Medical Director, Birth Control Federation of America. Fifty illustrations. *The Williams and Wilkins Co.*, Mt. Royal & Guilford Aves., Baltimore. 1941. 50c.

One of the great impediments to the use of contraception methods where they are most indicated has been the lack of simple instruction in reliable technique. This little book supplies such instruction.

THE MASK OF SANITY: An Attempt to Reinterpret the So-called Psychopathic Personality, by HERVEY CLECKLEY, B.S., B.A. (Oxon.), M.D., Professor of Neuropsychiatry, University of Georgia School of Medicine, Augusta, Ga. *The C. V. Mosby Company*, St. Louis. 1941. \$3.00.

The preface tells us that this book grew out of the unsatisfactory state of knowledge of that large group of psychiatric cases, which we designate psychopathic personality. Dr. Cleckley has studied the persons so afflicted, studied them assiduously, and he has come to a helpful understanding of them. A valuable book is this, one in which any busy doctor will find help in caring for a good many of his most trying patients. And it is delightful as a bit of literature.



MALARIA AND HISTORY

In 1523, the entire Atlantic seaboard of North America from Florida to Labrador technically became part of the ancient and powerful Holy Roman Empire for, in that year, Charles V granted a charter for this immense tract to one of his explorers and colonizers, Lucas de Ayllon. de Ayllon landed with a large body of followers at a site said to be the same as that of the later Jamestown, Virginia, and there established San Miguel de Guadalupe. This attempt to acquire the Atlantic seaboard for Spain died aborning, however, for a large proportion of the colonists, including Ayllon himself, died, mostly from an epidemic of "fever," which was undoubtedly malaria.

When the Pilgrims were weighing whether to go to bleak New England or to tropical South America, they decided upon the colder clime chiefly because "such hott countries are subject to greivous diseases, and many noy-some impediments, which other more temperate places are freer from, and would not so well agree with our English bodys." The choice of sites for many future southern cities was partly determined by the presence or absence of malaria.

Many believe that malaria was partly instrumental in establishing slavery in the United States, thus having a profound influence on its history. In the malarious territories white labor could not compete with the more immune Negroes.

In the second wave of migration which carried settlers over the Alleghenies and into the Mississippi lowlands, malaria took a terrific toll. The first settlements were along the river valleys and the clearing of forests and damming of streams led to a great increase in the breeding of Anopheles. After futile attempts to establish themselves on the river bottoms, the pioneers were forced to abandon such settlements and build new towns several miles from the river to escape the "deadly miasma of the lowlands."

PALLIATIVE TREATMENT OF ACUTE UNDIAGNOSED SKIN DISEASES

(S. E. Light, Tacoma, in *Northwest Med.*, March)

Diagnosis of acute skin conditions is very difficult to most practitioners; in many of the early acute conditions, the dermatologist may also find it difficult to make a diagnosis; and often an exact diagnosis is unnecessary. The basic principles of treatment are the same for many regardless of etiology. After a few days many of these skin conditions will subside without further care, and those which do not subside will develop typical diagnostic characteristics.

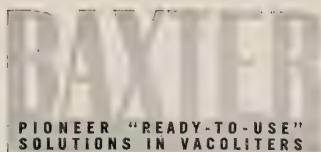
Unrelenting itching can be intolerable. The patient will be satisfied without an exact diagnosis, providing his symptoms are cured.

I am using the term "acute" to include not only recent sudden severe skin conditions, but also acute exacerbations or recurrences of previous conditions, more specifically any acutely irritated skin accompanied by itching or burning, whether edematous, erythematous, weeping, serous, purulent, urticarial or papular.

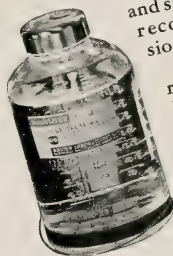
Allow no nuts, cheese, cocoa, chocolate, fried food, gravies, pastries, mustard, catsup, peppers, chili, cured meats, alcohol, tea, coffee nor coca-cola; in urticarial types of eruptions stop all coarse and raw foods.

In urticarial conditions or suspected food idiosyncrasies, give an initial saline purge; in other conditions, cascara, milk of magnesia, mineral oil, etc., but no phenolphthalein.

Keep free from all skin irritants and contacts with chemicals, plants, paints, dusts, animals. No wool or fuzzy materials should be permitted. Clothing and bedding



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should be cool, scanty, linen or cotton.

Internal medications of all kinds should be stopped; ephedrine, phenobarbital, amylal and bromides may be used in most cases. Opiates are contraindicated. Strontium bromide intravenously may give relief.

Axioms:—

Dry a weeping surface; do not grease it.

Baths, powders, lotions and wet compresses, but not ointments, for weeping surfaces.

Antipruritic drugs on the unbroken skin, none on the broken surfaces.

Prescribe no opium derivative in any acute skin condition.

Weeping surfaces; avoid soap, use oils, emollient baths or compresses to cleanse.

Use mild applications; they are usually quicker in the long run.

Eruption of the hands, examine the feet.

Listen to the patient. If he says an application irritates, stop it.

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HOOKWORMS.—According to *The Health Bulletin* a Goldsboro schoolboy shouts "down with hookworms." An excellent idea, but wouldn't "out with hookworms" be even better?

IT IS ESTIMATED that in two centuries of constant beating a human heart would produce only enough electric current to light a flashlight bulb for one second.

(HYPERTENSION—from p.217)

disclose the degree to which the nervous system plays a role. Such patients should lead a life of moderation in all respects, with at least eight hours' sleep each night and frequent short vacations. The overweights' eating habits should be adjusted; there is no sound reason for withholding red meat. Low-protein diets reduce muscle strength in general, and may weaken the heart muscle.

Drugs and specific remedies recommend for lowering b. p. have proved ineffective.

In the later stages when symptoms of a fatiguing heart appear, digitalis should be used even though the pulse is regular. In congestive heart failure, withdrawal of 500 c.c. of blood often produces prompt relief.

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This month appears Southern Railway's *THE SOUTHERNER*, to serve the territory between New York and New Orleans.

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The whole scene is enriched with an attractive arrangement of photo-murals which have been especially planned to heighten the atmosphere of luxury and beauty in *THE SOUTHERNER*.

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JAMES M. NORTHINGTON, M. D., Editor

Vol. CIII

CHARLOTTE, N. C. MAY, 1941

No. 5

A Consideration of Healing in Presumably Clean Wounds *

WILLIAM H. PRIOLEAU, M.D., F.A.C.S., Charleston

THE term presumably clean wounds denotes operative incisions in uncontaminated fields, and operative and traumatic wounds with known contamination, but which may proceed to uninterrupted healing under proper care. It is the factors which promote and interfere with healing which we propose to discuss. They can be broadly divided into those of a general or systemic, and those of a local, nature.

Too often is our attention so focused upon the wound itself that some important systemic disorder is overlooked. Koster and Shairo¹ reviewed a series of cases comprising clean hernia and other abdominal wounds, and deeply infected and disrupted abdominal wounds. Their findings suggest the idea that a poor nutritional state of which hypoproteinemia is a manifestation may favor both the development of infection and the disruption of clean wounds. Harvey and Howes² cite experimental evidence that a high-protein diet accelerates wound healing. A normal fluid and electrolyte balance must be maintained. Carbohydrate and fat metabolic disorders must be guarded against. Wolfer³ finds cevitic acid-deficiency more common than is generally recognized. It is early manifested by a deficiency in the collagenous material incident to wound healing. The normal blood cevitic acid is given as 0.6 to 1.5 mg. per cent and the suggested dose in case of deficiency 1 gram daily. Proper elimination must be maintained. Cardiac decompensation must be prevented,

for the resulting edema seriously interferes with wound healing. Systemic conditions attended by coughing, hiccoughing, vomiting and convulsions throw the severest of strains upon wounds, interfering with their healing and often causing disruption.

The local tissue processes concerned with healing can be broadly classified as inflammatory and reparative. While termed local for the purposes of discussion it must be borne in mind that by means of the vascular and nervous systems, they are in great part dependent upon and closely related to the systemic reactions. Furthermore there is no sharp dividing line between the inflammatory and the reparative phases of the local reaction. The inflammatory phase of necessity precedes the reparative—it even forms a groundwork for it.

The inflammatory phase has primarily to do with the combatting of organisms and the removal of foreign material and dead tissue. There is of necessity always a certain amount of inflammatory reaction, as even in an aseptically made incision in an uncontaminated field there are some non-viable cells and likely a few air-borne organisms requiring disposal. This phase of the inflammatory reaction is carried out by the phagocytosis and proteolytic enzymatic action of cells and serum, both local and blood-borne to the site of injury. The amount and intensity of the inflammatory reaction is dependent upon the nature and amount of tissue injury, foreign materials and organisms

*From the Department of Surgery, Medical College of the State of South Carolina.

¹Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia held at Greensboro, February 24th and 25th.

present. Accordingly the best healing is attended by relatively little inflammatory reaction. Also the inflammatory reaction may be considered as an index of the nature of the healing, except in those rare cases, generally in emaciated patients, where there is no evidence of attempt at healing. The reparative phase starts before the termination of the inflammatory, but only after conditions have been made suitable for it. The actual repair is by regeneration of the injured tissues, or replacement fibrosis alone, or a combination of the two. In most instances in the more highly differentiated and parenchymatous tissues there is no restoration of function, but only scar formation. Elimination or reduction to a minimum of those factors which provoke an inflammatory reaction will be followed by an earlier and more orderly reparative process.

The care of a wound should be carried out under aseptic conditions; however, it must be stressed that asepsis alone will not assure good wound healing.⁴ While it is admittedly impossible to prevent the entrance of all organisms into the wound, the number can be reduced to an inconsequential minimum. Also they can be limited to those air-borne and relatively nonpathogenic, and some few from the patient's skin. For the eradication of these dependence must be placed upon healthy tissue in a properly cared-for wound. Traumatic wounds are frequently unnecessarily subjected to contamination by first-aid treatment carried beyond the requirements of the case, and often administered under improper conditions.⁵ Commonly adequate, and the best, first-aid consists of a sterile bandage firmly applied. In case of free arterial bleeding a pair of forceps or a broad-based tourniquet may be necessary. Exploration, especially probing, and cleansing should be reserved for such time and conditions as permit of satisfactory care of the wound. Contamination from the respiratory passages is only too common due to failure of the surgeon to cover his mouth and nose.

In most cases anesthesia is necessary for the proper care of a wound. This may be general, regional or local, according to the nature of the case. If local, the anesthetic solution should be injected aseptically into healthy tissue at a reasonable distance from the wound—and never through the wound—on account of the danger of spreading infection. The skin around the wound is thoroughly cleansed with soap and water; this may be sometimes followed by the application of a chemical antiseptic. For obtaining asepsis of the wound itself chief reliance is placed upon a thorough but gentle irrigation with soap and water for the removal of dirt, organisms and loose tissue. The

wound is now ready for securing accurate hemostasis, and débridement should this be necessary.

The matter of antiseptics is still controversial. Unwarranted dependence upon it is probably the most common error in wound care. It is not a substitute for asepsis. In the words of one author,⁶ "The thoughtful surgeon is not beguiled into a false sense of security by a coloured solution." According to the same author,⁶ "Any antiseptic sufficiently strong to kill bacteria rapidly will also kill living tissue." Furthermore the effect of antiseptics is limited to organisms on the surface, and it is these which can be removed by means less injurious. Necrotic tissue and exudate resulting from the action of the antiseptic provoke an inflammatory reaction and even predispose to the growth of any organisms remaining. The use of antiseptics in the operative treatment of wounds is probably best limited to application to the previously-cleansed surrounding skin.

The presence of devitalized tissue, on its own account as well as its predisposing to infection, is an important cause of inflammation with its resultant interference with wound healing. Thus after the preliminary cleaning, all tissue already devitalized and that likely to become so from direct injury or impaired blood supply, should be excised; an exception being made of such important structures as nerves, tendons and large vessels, the survival of which may be in doubt. Furthermore, it is important not to cause further tissue necrosis by using strong antiseptics, by crushing with forceps or by strangulation and cutting with too-tightly-applied sutures. Irrigation of the wound is carried out at intervals during this débridement.

The proper use of suture material is an important factor in preventing inflammation. In securing hemostasis mass ligatures must be avoided as they lead to excessive tissue necrosis. Approximating sutures should not be under tension, as this results in pressure necrosis. Security of the suture line should be obtained by a greater number of fine sutures rather than fewer coarse ones. As suture material is both directly and indirectly a cause of inflammation, the amount used should be the minimum necessary for the purposes at hand.

The suture material employed must be considered from the standpoint of absorbability. Silk is the most commonly used nonabsorbable suture. As a substance, when used properly, it provokes only slight inflammatory reaction and thus does not materially retard wound healing. A wound in which silk is used is better able to withstand slight contamination than one in which catgut is used.⁷ Silk is not destroyed by bacteria and proteolytic

reactions, whereas catgut may early be destroyed depriving the wound of much needed support. The absorption of catgut is effected by the exudative and leucocytic phases of an inflammatory reaction which retards healing to a variable degree and predisposes to infection. Even in the absence of contamination this reaction may result in wound induration and the drainage of serum. The main disadvantage in the use of silk is that in the presence of gross infection, there may result sinuses leading from the silk sutures, which may be extruded or may have to be removed. In this respect fine alloy steel wire (35G) in spite of some disadvantages in handling, has enjoyed some popularity due to the fact that healing is likely to take place in the presence of infection without its removal or extrusion.⁸⁻⁹ From the foregoing it would appear preferable to use silk where the wound can be properly prepared and there is likelihood of minimal contamination. On the other hand, where gross infection is likely to ensue, there are decided advantages in the use of catgut. Alloy-steel wire is the choice for aponeurotic sutures in the presence of infection.

Before closing the wound definite requirements must be met. It must be clean and dry. Its surfaces must be composed of healthy tissue. Regarding contamination with likelihood of resulting infection, making closure inadvisable, an arbitrary limit of six hours between injury and treatment is commonly used. It is held that after this, invasion of the tissues by microorganisms is likely to have reached an extent such as to preclude healing without infection. Even a shorter time limit is placed upon the advisability of primary repair of tendons and nerves. Should closure not be advisable the wound is packed with vaselized or plain gauze, or it may be closed in part with provision for drainage. In the treatment of traumatic wounds, sulfanilamide and its derivatives are being used both locally and systemically. It is still too soon to evaluate their effect.²⁰ Primary closure if decided upon must be carried out with great care. The surfaces of the wound must be accurately approximated, due care being taken to avoid tension. Dead space, present or potential, must be avoided, as it will form a site for serum collection with predisposition to infection. The skin edges should be accurately approximated with a nonabsorbable suture.

Whether primarily closed, drained or packed open, the wound should be afforded the support of an adequate dressing firmly applied. In some cases immobilization with splints or plaster may be advisable. Rest is most conducive to healing; an exception to its use being those cases requiring

motion for the preservation of function in tendons and joints. Early motion may be productive of exudation, secondary hemorrhage and in some cases separation of the suture line, all of which provoke an inflammatory reaction and retard healing. The efficacy of rest in controlling infection is well illustrated in Trueta's¹¹⁻¹² method of plaster-immobilization of the soft tissues in the treatment of war wounds—this, of course, preceded by thorough cleansing and débridement. This is an extension of the method of treating osteomyelitis by proper drainage followed by closed dressing with immobilization of the parts, advocated by Dr. H. Winnett Orr, as a result of his experiences in the World War.

Finally, as pointed out by Elkin,²¹ a record of wound healing should be kept. It affords a means of a critical analysis of our results. Furthermore, it acts as a stimulus to better work.

SUMMARY

Systemic factors affecting wound healing are reviewed in brief. Local factors are considered in some detail. Those conditions which provoke an inflammatory reaction generally retard healing. From this standpoint are discussed operative trauma, débridement, suture material, asepsis, anti-sepsis, wound closure and dressings.

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Discussion

DR. R. O. LYDAY, Greensboro: Mr. President and Members. Dr. Prioleau apologized to me last night for not having sent a copy of his paper. Having heard him before, I knew he would cover the ground so thoroughly and comprehensively that it wouldn't make much difference whether I read his paper or not because I wouldn't be able to add much to it in discussion.

I had thought the few remarks I might make would be limited to what we would expect to have as clean wounds in the abdomen and I am very glad to hear Dr. Prioleau divide wound healing processes into general and local. I don't believe that we lay enough emphasis on preparation of the skin before operation. I believe we ought to use soap and water much more frequently and copiously than we do, and with much more vigorous scrubbing.

Another important aid is the contribution of Dr. Hart, who is here, in the fact that he has brought to the attention of the surgeons and hospitals over the country the dangers that might be expected from the air-borne bacteria in the operating room. He also emphasized the fact that the operators and assistants who have chronic infections of the nose and throat should be extremely careful in protecting the wound from themselves. He has shown that particularly in arthroplasty incisions that the incidence of infections and the rate of mortality have been tremendously reduced by this method which he has described and practiced.

Dr. Prioleau has emphasized already the importance of maintaining a normal protein level and we are all trying to do that now since we are using blood plasma more freely than heretofore. Certainly transfusions of blood in cases of cancer and other debilitating conditions is very important.

I was interested in hearing him speak of the importance of maintaining a normal cevamic acid level in the blood in cases of vitamin C deficiency. Dr. Elmer A. Hallman, of California, a few years ago read a paper in Philadelphia in which he was very enthusiastic about this measure as a preventive of operative complications and promoter of wound healing. He gave vitamin C as outlined by Dr. Prioleau today. Of course we are all aware of the importance of using vitamin K in jaundiced patients. That certainly does contribute to wound healing.

DR. DERYL HART, Duke University School of Medicine: I enjoyed Dr. Prioleau's paper very much indeed. There are so many factors involved in the healing of wounds, we have to be on our toes all the time to be sure we don't overlook some of them—fluid balance, salt balance, protein balance, vitamins, and many others.

I will say of bacterial contamination in wounds—every wound is bacterially contaminated and there is no way we can prevent it. We can cut it down, but it can't be done away with entirely, as Dr. Prioleau said.

I have recently carried out some studies in regard to bacterial contamination of wounds especially in the pubic region and the neck region. We can clean the hip as thoroughly as we can by scrubbing and the use of chemicals, and at the beginning of the operation, when we take a culture, we almost never get a positive growth. On a hot summer day, we can do the same procedure and get 701,000 colonies in the hip at the end of the operation. I want to emphasize the importance of keeping the wound clean in doing large operations. We never let clamps lie against the skin. We put a towel under the clamp and another over the clamp in a long incision. The two clamps are taken off and do not come in contact with the gloved hands. The same way with the surgeon's hands. Then no growth will start. We almost never get pathogenic

bacteria out of the air provided no human being is occupying that same region of air. We have tested it many times. The air above the hospital is free of pathogenic organisms. Bacteria in the room grow in the throats of the occupants. The only value of a mask is to keep you from spitting in the wound. You can't keep the bacteria in the air going up. Hemolytic staphylococcus is the organism that we must commonly have to deal with. It is in the air many days of the year. We almost never find streptococcus wound infections. In carrying out our experiments we would blow air through the mask and it would show almost as much contamination distal as proximal.

Eliminating air sources of contamination of wounds I might say, is the last attack, because we attacked by skin preparation and isolating the wound from the skin long before we had a method of sterilization. With the elimination of air contamination, we will be 99 per cent efficient.

In the first five years of Duke Hospital's operation out of 15,000 operations of all types we had 12 deaths from infections in clean wounds—arthroplasty 4, mastectomy 1, brain cases 3, orthopedic cases 3, dissection of lymphatic gland 1.

After the elimination of sources of air contamination we cut the rate to less than half of one per cent. Out of the 30,000 operations in the past five years we did not get a clean wound infection in arthroplasty, laminectomy, hernioplasty, laparotomy; nor in an amputation unless the member was gangrenous. Only two larger procedures where air comes into play became infected. In a wound in which catgut is used infection is more apt to get a foothold than in one in which silk is used.

CLEANSING THE OPERATIVE FIELD

(Editorial in *Rocky Mount. Med. J.*, April)

Experience is establishing the fact that gentle cleansing with abundant soap and warm water, cotton balls, and irrigation with normal saline solution is a superior method. Careful observers insist upon pure white soap—not tincture of green soap, which may be irritating or destructive on account of its alcoholic content.

Ethyl alcohol is painful, useless and probably harmful in open wounds; it may have some value as a detergent upon cutaneous wound margins or an operative field, but germicidal properties of ordinary solutions are not significant. Ether is an excellent fat solvent, but its rapid evaporation and precipitation of proteins nullifies other potentialities. The value of ether except on oily, moist and unprepared surfaces is doubtful. Acetone is a very weak germicide. Water nullifies the fat-solvent properties of acetone.

Soap and water plus 5 to 10 minutes of gentle and patient washing, is thought by many surgeons to be the superior method for preparing the field in every type of surgery. Lessened incidence of stitch abscesses and other postoperative infection is substantiating their conviction. (Thirty years ago Dr. Wm. H. Taylor, chemist though he was, insisted that the "best antiseptic is an abundance of soap and an abundance of hot water"; and Dr. George Ben Johnston told his surgical assistants they need not put their hands and arms into the bichloride solution, that scrubbing for five minutes in soap and hot water, and rinsing well in hot sterile water was ample.—*J. M. N.*)

ACUTE PANCREATITIS.—Think of, in any cases of extremely severe pain in the left upper sector of the abdomen.

ABSENCE OF THE GALLBLADDER.—There is such a thing as congenital absence of this organ.

Address*

The Patient and the Surgeon in Wounds and Fractures

H. WINNETT ORR, M.D., Lincoln, Nebraska

Mr. President, Dr. Lewellys Barker, Ladies & Gentlemen:

Permit me to thank you first for the invitation to come to this meeting. I feel very much honored to be the guest of your Society. In one respect at least it is entirely suitable that I should be here on this occasion. You organized the Tri-State Medical Society in 1899 and I was graduated in medicine in the same year from the University of Michigan. It is proper, therefore, that we should celebrate the anniversary together.

IT has been suggested that I discuss certain methods and technics in the treatment of infected wounds and compound fractures. I should prefer rather to consider the subject from the standpoint of the patient himself. I believe many of us should alter our point of view as to what the patient himself can and must do to recover from an infected wound or a compound fracture. It is a mistaken attitude toward such a patient that has made many difficulties both for the patient and for the surgeon himself. It is therefore, not a technic nor a method in which I hope to interest you particularly, but a point of view in dealing with a situation in which it is the surgeon's duty, not to cure a wound or a fracture, but only to assist the patient in his own efforts toward recovery and repair.

It is my belief that if certain fundamental principles of fracture repair and wound healing are recognized and kept constantly in mind, methods and technics will more or less automatically take care of themselves.

Throughout the history of surgery frequent dressings have been a difficulty in taking care of compound fractures. Wound dressings have always been thought to be necessary or even of paramount importance. Surgeons have considered it essential to keep the wound clean and to treat the infection—regardless of the effect upon the broken bone, the injured limb otherwise, or even upon the comfort and welfare of the patient himself.

Cesare Magatus, an Italian surgeon of the seventeenth century (1676), advocated the infrequent dressing of infected and inflamed wounds. Belloste (1716), a celebrated French military surgeon of the next century, attempted to follow him in this respect. John Hunter, who came along a little

later (1794), remarked that however we might wish to maintain a fractured limb in correct position and leave it at rest, it was impossible because "it is necessary to dress the sore every day."

John Hilton (1863) and Hugh Owen Thomas (1880), celebrated English surgeons, were distinguished apostles of rest in the treatment of bone and joint inflammations. Yet they too bowed to the common custom of daily dressings for such wounds in most cases.

It remained for Joseph Lister (1867) to discover a method of treatment which had for its object the exclusion of infection from and the protection of wounds. When Pasteur (1865) discovered germs, Lister conceived them at once to be the source of wound infection (putrefaction) and wound inflammation. Someone has remarked that Lister "was sitting on the heights and waiting there alone" for this discovery in bacteriology.

Having decided that germs were the cause of putrefaction, it was Lister's conception that a chemical means could be employed to exclude organisms of all kinds from wounds. He urged at the same time that both chemical and mechanical damage to the wound surface should be avoided and that all dressings should be done in such a way as to protect the patient against secondary and further infection.

Unfortunately Lister's associates and his immediate followers became interested in the search for a chemical cure for infection. Even Lister, though he did not lose sight of his original conception with regard to the antiseptic system, joined in the search for a chemical that would kill germs in wounds without harm to the patient.

From Lister's time until the Great War of 1914-1919 almost every chemical and every chemical combination that could be thought of was employed for wet dressings, compresses, irrigations and application to infected wounds. These dressings were done regardless of disturbance to the wound, to the limb and to the patient, so that the search for a specific chemical cure for all kinds of infection became almost a panic during the last war.

Loss of confidence in chemicals for antiseptic wound treatment led some prominent surgeons to exclaim that the Lister antiseptic method had

*Presented by Invitation to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, 24th and 25th.

failed. This indicated a lack of understanding of Lister's original conception of "the antiseptic system." The efforts to find and apply a chemical cure for the infected wound failed then and has continued to fail because more harm has been done by the chemicals, more trauma has been inflicted upon the wound and the patient by dressings, and often more new infection has been introduced than the patient could tolerate during his efforts to get well.

It is a change away from this kind of treatment that I have proposed. The change that I have suggested is a program consisting of (1) reposition of the patient and his limb in correct position, (2) restoration of circulation and blood supply to the injured parts and (3) protection of the wound and the patient against injury and infection. This is the attitude of the surgeon, to which I have referred.

My own training in orthopedic surgery has led me into lines of thought regarding these conditions that were mapped out by Hugh Owen Thomas and his star pupil, Dr. John Ridlon of Chicago. Thomas insisted that every injured and inflamed limb should have the benefit of rest, "enforced, uninterrupted and prolonged." That this succeeded so well in injuries and diseases of bones and joints was due to the mechanical efficiency with which Thomas made and applied his splints and carried out his postoperative care in such cases. It was a familiarity with the splints of Thomas and with the successful use of plaster as taught by Dr. Ridlon in bone and joint infections that led me to propose this different line of treatment for the more acute and inflamed extremities that we encountered in the Great War.

When I began my military service in British hospitals in June of 1917, I found that a very active program of antiseptic treatment for all infected wounds and compound fractures was being carried out. At least a dozen different kinds of chemicals, old and new, were being used as wet dressings, compresses, irrigations and even in arm and leg bathing-tubs for these affected extremities. This was still known as the Lister antiseptic method. It impressed me at once that this was in contradiction to the teachings of Thomas and a departure from the method that Lister had proposed in his original papers in 1867. At that time Lister specified particularly that chemicals were not to be applied directly to the wound surface and that dressings were to be designed to afford protection against invasion by infectious organisms. In the treatment in the British hospitals as I saw it, wounds were being exposed every day or several times a day so that much damage was

being done to the wound surface and many new organisms were being introduced by the manner in which dressings were being done.

It should be obvious to anyone that to take the dressings off an open wound and to put that extremity into an open tub, then to reapply dressings with exposure of all the parts to the air, to fingers, instruments and non-sterile surroundings would be to add to the infection of the wound. Even antiseptic tub baths or dressings subsequently could not counteract the harm done in the bathing and dressing routine.

About that time the Carrel-Dakin method was brought forward in France by Alexis Carrel of New York. This was a cleverly designed technic sponsored and promoted by the enormous resources of the Rockefeller Foundation and popularized in France by an extensive hospital campaign. Actually, the Carrel-Dakin method was only another refined antiseptic irrigation method. The chemicals were different, but not particularly better, than many that had previously been employed. The technic had been worked out with great care in the laboratory and, as done by Carrel and his associates, represented greater care and precision than many of the dressings formerly used in military hospitals.

However, the entire Carrel-Dakin program was simply a more elaborate, more expensive and more highly technical method of excluding infection from wounds than that proposed by Lister in years gone by. The Carrel-Dakin method, also, involved frequent exposure of the wound, movement of the injured and damaged extremities, and in less than expert hands exposure of the wound to new and different types of infection.

From my standpoint as an orthopedic surgeon the Carrel-Dakin method was objectionable because of the necessity for adapting splints, plaster casts and other immobilizing devices to the frequent disturbance of the wound and the injured limb. For that reason I have never used it. In some of the hospitals I visited I found that the Carrel-Dakin method was doing more harm than good and that bad results in many of the fractures were the result of infections and injuries incident to the dressing program. The faults of the Carrel-Dakin method were the same faults as those of other frequent-dressing methods from Lister's own time until the time of the War.

In the meantime other methods had been proposed for the treatment of fractures which involved a point of advantage not commonly recognized. That is to say Sir Arbuthnot Lane (1893), Lambotte (1902), Codivilla (1905), Dr. Fred Albee (1911) and several other surgeons were employing

direct fixation devices for fractures. By means of metal plates or bone grafts, fracture fragments were being restored at once to correct position and held there (direct fixation) in correct position. These operations had the ancillary effect of restoring correct position to the nerves, blood vessels, lymphatic channels and other parts of an injured limb.

In infected cases Lane, Albee and others attributed their results in the healing of wounds to the Carrel-Dakin or other chemical antiseptic methods they employed. It seemed to me that fixation of the bones and restoration of the contour and physiology of the limb gave the patient his better opportunity to defend himself against infection and to reestablish his own forces of resistance and repair. I could see, therefore, that these patients were getting well because of improved circulation, nerve supply and lymphatic flow provided by the correct position and protection of the limb as a whole. This was incidental to the direct fixation procedure and *not because of, but in spite of*, antiseptic wound dressings.

For my own fractures, both simple and compound, I have always employed indirect fixation. That is, ice-tongs or pins to fasten the bone fragments in correct length and position and included in plaster casts. By this plan there is no occasion to operate or do any surgical damage at the point of fracture. No injury is done by operation to the bone or the other tissue unless the compound fracture wound requires debridement or better drainage. We do not put in bone plates, wires or screws at the point of fracture, or even drainage tubes; we insert only the vaselin pack to provide a saucer-like dressing around the edges of which drainage can take place if necessary.

Even when bone-plates, screws or grafts have been put in by others and when these have to be removed, we follow the same plan. Namely, we fasten the bone fragments by pins at a distance from the open wound, provide drainage by means of a vaselin pack and immobilize and protect the limb and the wound in the same way by means of a plaster cast.

It is this alteration in our point of view to which I refer. Instead of considering that such a wound, even when infected, requires treatment for the infection or antiseptic therapy to cure, we should consider that all that a patient requires is correct position, drainage and protection in order to afford him his own best opportunity to recover.

This was indeed the original conception of Lister himself. On several occasions he reminded us that before we knew anything about germs or the use of antiseptics many patients recovered follow-

ing injury and operation, because of their ability to resist infection and to repair their wounds. Lister was quite able to appreciate the importance of permitting the patient to make use of these natural forces to resist invasion by organisms and to obtain healing.

Apart from the actual damage done by frequent dressings and leaving out of consideration those complications due to the introduction of germs, even taking no account of the loss of position of fractures and injured limbs, the effect of frequent dressings upon the patient's general condition and morale is a matter of great importance. The different (and better) conduct of the patient which follows the adoption of the plaster-cast-and-infrequent-dressing method is so obvious that it always excites comment.

A good deal has been said in the literature of recent years about primary or secondary closure of infected wounds and compound fractures. That matter has come up again recently with the proposal to do such closures over wounds or fractures packed with sulfanilamide or sulfathiazol. *If a wound can be truly sterilized* either primary or secondary closure is a justifiable surgical procedure, not otherwise. That some brilliant results have followed in such cases is well known. That the method will ever be suitable for general employment is most unlikely.

With the Carrel-Dakin method, with mercurochrome, and now with sulfanilamide, surgeons have been encouraged to believe that such sterilization of wounds (or "fixation of infection") is possible. All of our teaching in bacteriology is to the effect that negative cultures from such wounds do not mean that the wounds are sterile. They simply mean that no germs have been seen. Actually, a wound that has been cultured with negative results for several times or for several days may still harbor pus organisms or even anaerobes in such number as to cause postoperative complications of the most serious kind if the wound is sutured shut. In my own practice, therefore, it is an expedient which I have never employed and which I have never recommended. I think one does a primary or secondary closure of a wound that has been actively or is potentially infected at great risk to the patient in every case.

In depending upon laboratory findings for the adoption of such treatment we should bear in mind that there is a science of the bedside as well as of the laboratory and our clinical experience should guide us no less than laboratory findings which are often susceptible of erroneous interpretation.

The military experience of Dr. Trueta in the Spanish War has given the final and conclusive

evidence necessary to substantiate the method I have described as a kind of surgical treatment applicable to the most desperate military situations. Trueta, in Barcelona, treated more than a thousand cases of gunshot wounds and compound fractures due to military, motor and aeroplane accidents—with only six deaths. In all these cases treatment was primary sterile dressings with open wounds and plaster fixation of the injured parts in correct position.

The principle employed was that for which Dr. Trueta has kindly acknowledged his indebtedness to me. In fact, in his book he says that the method I have suggested is destined to give a new direction to surgical practice in these cases. Many recent reports from Britain confirm the reports that I made to the British Societies in 1930¹ and 1933² and the program that I have followed for twenty years.

I can only conclude then by advocating, as I suggested in the beginning, that the program proposed by me in 1923 be followed in all these cases. In other words, immobilize the parts on the traction table in correct position as soon as possible after injury and before the operation. Do the operation, not as a debridement, but as a drainage operation. Use a vaselin pack for drainage. Control the length and position of the limb by means of pins through the skeletal structures and imbedded in the plaster cast. Leave the cast closed and do not expose the wound to further trauma or infection by frequent dressings.

This regimen has given, and will give, better results for wounds and fractures than any antiseptic wound treatment yet brought forward.

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TONSILS IN OR OUT

(John Zahorsky, in *Bul. St. Louis Med. Soc.*, April 18th)

At its worst stage, nurses, educators and parents became so imbued with this prophylactic theory that every physician was compelled to bow to the clamor of the public. Not since the days when phlebotomy was the most popular therapeutic measure was so much blood shed. After the study of 150 children, I concluded that tonsillectomy as a preventive measure was a failure. These conclusions were laid down:

1. The removal of tonsils does not prevent middle-ear disease.
2. Sinus infections are more common in the child who has had his adenoids removed.
3. Tonsillectomy does not prevent colds and increases the tendency to pneumonia.

4. Enlarged cervical glands occur very often in the child who has his tonsils removed.

5. Rheumatism, heart disease and chorea are not prevented by tonsillectomy.

6. Malnutrition occurs almost as frequently in children having their tonsils out as in those who have them in.

These conclusions were subsequently corroborated by the studies of the United States Public Health Service of the cases of several thousand children.

The removal of the tonsils during childhood as a prophylactic measure became obsolete.

Then another idea was proposed: The tonsils of children are often diseased and should be removed. Unfortunately, no one was able to define this term, nor describe the clinical features so that a clear diagnosis could be made. Microscopical examination of hundreds of tonsils removed revealed no disease in most of the tonsils examined. Removing the tonsils or adenoids does drain the submucosa surrounding these organs and temporarily improves the condition. You should see the child a year later, at the next epidemic of respiratory infections.

An obstruction in the nose due to an allergic rhinitis is made worse by taking out the adenoids. Asthma is not benefited by tonsillectomy. Recent studies have shown that the child without tonsils is more susceptible to poliomyelitis, at least the fatal bulbar form.

The indications for removal must be very clear before such an operation is to be advised. The diagnosis must be based on a complete diagnostic survey of the child. It is crass negligence to propose tonsillar operations merely on an inspection of the throat. In doubtful cases let the tonsils stay in, do not take them out. Harm may be done to the young growing child. The tonsils are intimately connected with the development of immunity.

THE MALMROS-HEDVALL LESIONS OF PULMONARY TUBERCULOSIS IN ADULTS

(A. T. Laird, Noremberg, in *Min. Med.*, Feb.)

The adult or reinfection type of pulmonary tuberculosis is responsible for most of the cases of chronic invalidism or death that result from infection with tubercle bacilli. Only a small percentage of all persons who acquire a primary infection develop this serious form of clinical disease, but when the reinfection type of pulmonary tuberculosis does result it is extremely important that the diagnosis be made as early as possible.

The presence of this type of the disease may now be determined in certain cases by the use of the newer methods, long before the patient shows any outward indication of illness or has even a premonition that his health is not perfect.

In the majority of the cases in which the reinfection type of tuberculosis of the lungs developed later, there were no subjective symptoms of illness; the sedimentation test was normal in most of these cases.

The reinfection or adult type of pulmonary tuberculosis in those primarily infected in adult life usually began with a lesion called by Malmros and Hedvall a "subprimary initial lesion" which often took the form of single or multiple cloudy spots or flecks on the x-ray film, usually in the supraclavicular region or in the first interspace or simultaneously at both places.

In individual cases an appearance was noted, near the area of flecks, of "early infiltration lesions" dense and their edges more sharply defined than was the case with the subprimary initial lesions.

These two lesions, the subprimary initial lesion and the early infiltrate, were the first evidences seen of the adult or reinfection type of pulmonary tuberculosis.

The Mechanism of Cardiac Pain and its Differentiation From Chest Pains of Radicular Origin*

T. W. BAKER, M.D., Charlotte

IN 1912 "acute indigestion" began its exit and coronary thrombosis made its entrance. It was James B. Herrick¹ of Chicago who introduced the diagnostic concept of coronary thrombosis and helped us to recognize the aliases under which occlusion of the coronary arteries had been masquerading. Such diagnoses as "acute indigestion," "ptomaine poisoning," and "acute dilatation of the stomach" have made a complete fade-out from our vital statistics. This diagnostic transformation has occurred in much the same manner as appendicitis and peritonitis supplanted the diagnosis of "locked bowels," following the memorable paper of Reginald Fitz in 1886.

The teachings of Herrick concerning coronary thrombosis have thoroughly penetrated our medical consciousness. This is evidenced by the fact that in 1938 we find Herrick² himself cautioning us against his own brain child and warning us not to become too coronary conscious. I quote: "When a previously misunderstood or overlooked disease has been shown to be common, when its symptoms are first described, for a time it is likely to be a front page medical news item. It is a best seller So it has been with coronary occlusion." We are probably overshooting the mark in our tendency to regard too hastily any pain over the precordium as a heart attack. We all have a mental leaning towards coronary thrombosis, due largely to our praiseworthy desire to guard our patient against the evil consequences of overlooking this life-threatening condition. Fortunately the rest in bed which we prescribe is generally harmless, frequently beneficial. Unfortunately, however, it may deprive the patient of the benefits of timely and surgical treatment, or of a more suitable medical management, and all too frequently may exaggerate a preëxisting cardiac neurosis.

The diagnosis of coronary thrombosis is not always easy. Certain cases may present confusing differential possibilities. It was just such a case that increased my interest in the character of cardiac pain, its mode of radiation, its similarities and dissimilarities to other chest pains.

For the sake of clarification, chest pains may be classified into three groups, as suggested by Gunther³: (1) organic pains arising from thoracic viscera which are transmitted by viscerosensory

nerve pathways; (2) pains of radicular origin which are transmitted by the spinal nerves, and (3) non-organic or functional pains, which are all too frequently transmitted and projected by a fertile imagination.

The organic chest pains of visceral origin may be further subdivided as follows:

Those arising from the mediastinum:

- (1) Angina pectoris.
- (2) Coronary artery occlusion.
- (3) Acute pericarditis.
- (4) Acute mediastinitis.
- (5) Dissecting aneurysm of the aorta.
- (6) Obstructive lesions of the esophagus or bronchi.
- (7) Diaphragmatic hernia into the mediastinum.
- (8) Cardiospasm.

Those of pleural origin:

- (1) Acute pulmonary and pleural inflammations.
- (2) Pulmonary embolism.
- (3) Spontaneous pneumothorax, atelectasis or massive collapse of the lungs.
- (4) Shoulder and chest pain from sub-diaphragmatic lesions.
- (5) Rare and unusual pulmonary pathology.

This classification is obviously not all-inclusive but it will serve as a basis for this discussion. Neither time nor your kind indulgence will permit a differential study of all of the above mentioned causes of chest pain. Therefore I shall confine this paper to a discussion of elemental principles concerning the differences between visceral and radicular pain of thoracic origin. A knowledge of the radicular syndrome will enable us to evaluate chest pain since its common occurrence has so often been misinterpreted as angina pectoris or an acute occlusion of a coronary artery. When confronted with an obscure chest pain, we might well begin our analysis by first asking the questions: Is it visceral? Is it radicular? Or is it functional?

What do we understand by visceral pain and the viscerosensory reflex? Pain of visceral origin may be vaguely localized in a viscus as a deep soreness. More frequently, however, the pain impulse arising from thoracic viscera or serous membranes is projected to a distant point of the body wall which is supplied from the same posterior nerve

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

roots which supply the viscus or serous membrane. This phenomenon is known as referred pain. The referred pain of certain skin segments in relation to most of the large viscera is fairly well known and corresponds somewhat to their metameric origin within the cord. Referred pain may arise in the dermatome directly over an organ because that may correspond to the segmental innervation. However, in the transpositions of organs during embryological development that viscus may have shifted its position quite a bit. Although appendiceal pain is usually referred to the body wall directly above it, renal pain is referred to the groin or testicle, and gallbladder pain is frequently referred to the right scapular region. The embryological shift of the diaphragm from the neck region explains why pain of diaphragmatic origin is referred to the shoulder.

Pain of cardiac origin is an excellent example of referred pain. It is generally agreed that severe pain of cardiac origin is almost always the result of ischemia of a portion of the myocardium produced by a thrombosis or a reduction in calibre of one of the coronary arteries. Lewis⁴ has likened the pain to that which may be produced in the arm by a continuous gripping of the hand while the circulation is occluded by means of a blood pressure cuff. Cardiac pain can be evoked by proper stimuli in any region of the heart supplied by sensory terminals, which tissue examinations have shown to be as numerous as 300 per square centimeter⁵. The pain of coronary thrombosis is usually characteristically referred over the outer part of the left side of the chest wall, down the inside of the arm, up the neck to the angle of the jaw, and to both shoulders and back. The pain may be referred to the epigastrium and may simulate that of an abdominal catastrophe.

Pain of cardiac origin is conveyed from the heart by the superior, middle and inferior cardiac nerves to the chain of the three cervical and first five thoracic sympathetic ganglia. These pain impulses are then conducted through the white rami of the first to the fifth thoracic ganglia to enter the corresponding spinal nerve roots. The impulse reaches the posterior horn of the gray matter of the upper thoracic cord, from whence it travels to the corresponding segments of the skin and body wall. The spinothalamic tract which crosses to the opposite side of the spinal cord conveys the pain impulses to consciousness. If the pain is of a sufficient degree, the painful impulse will cause a reflex contraction of the muscles of the body wall underlying the corresponding skin segments to which the pain is referred through stimulation of the anterior horn cells. This last phenomenon

is particularly evident when pain is referred to the flat muscles of the abdomen, and is thought to be the physiological explanation of rigidity.

Characteristic of coronary thrombosis is a sense of constriction as though the chest were gripped in a vise, or as if the breast bone would break. MacKenzie⁶ attributes this to a visceromotor reflex—that is, a reflex spasm of the intercostal muscles which prevents free movements of the chest.

The pain of angina pectoris and the other organic chest pains of visceral origin enumerated previously are referred over similar nerve pathways to various skin segments in the same manner but with varying distributions.

Pain of radicular origin is much simpler in its explanation. With rare exceptions, radicular pain of thoracic origin is produced by one of two causes: (1) by mechanical impingement upon the nerve roots by new growths or destructive processes of adjacent structures, or (2) by infection of the nerve roots or their contiguous structures.

The organic chest pains of radicular origin may be further classified into:

- (1) Osteoarthritis of the dorsal and cervical spine.
- (2) Tuberculosis and osteomyelitis of the thoracic cage.
- (3) Erosions and destruction of the vertebrae, ribs and sternum by aneurysms, lymphoblastoma, and other new growths.
- (4) Compression fractures of the vertebrae.
- (5) Protrusion of the intervertebral discs.
- (6) Tumors of the spinal cord, meninges and nerve roots.
- (7) Acute infections of the nerve roots.
- (8) Herpes zoster.
- (9) Syphilis (tabes dorsalis).
- (10) Postural root pains of kyphosis and scoliosis.

Radicular pain is projected usually from a posterior origin to an anterior terminal along the course of a definite spinal nerve. It is important to remember the approximate levels of distribution or dermatomes of the trunk supplied by these nerves. It is not necessary to remember the exact distributions, but if we will recall a few landmarks they will serve as hitching posts for our memory of this diagram. Recall that the anterior neck is supplied by the third cervical cord segment, that the shoulder is supplied by C 4, that the region of the nipple is innervated by Th. 4, the epigastrium by Th. 6, the umbilicus by Th. 10, the groin by Th. 12, and we have the keys to the segmental distribution of the nerves supplying the neck, chest and abdomen. Most of us cannot trust our memories regarding the segmental distribution to

the extremities, as it is far more complicated, but information at one's finger tips in the form of a good neurological text will readily solve this problem. It is well also to bear in mind that there is a difference of about two or three segments in the relation of the spinal cord to the vertebrae. Thus it will be seen, for example, that the 6th dorsal cord segment lies at a level of the 4th dorsal vertebra. This fact must be utilized constantly in the localization of cord lesions and should also be borne in mind when requesting regional x-rays of the spine. For example, if the radicular pain indicates involvement of a dermatome supplied by the third lumbar cord segment, the bony changes, if present, will be most likely found in the region of the 12th thoracic vertebra.

The third group of chest pains, those of functional origin, usually defies anatomical distribution of nerve pathways. For this reason these pains are rarely confused with chest pains of radicular origin, but difficulties frequently arise in the differentiation of functional and visceral pain. Particularly is this true of organic conditions of the chest in which there may be few objective findings, the most notable example being angina pectoris. Much of the personal equation and evaluation of the individual's mental and emotional status enter into our conclusions concerning pain of functional origin. Many elements of personal behaviour, environment and situation must be considered, but the scope of this paper does not permit an adequate discussion here.

With this brief review of the anatomical and physiological differences between thoracic pain of visceral and of radicular origin as a basis, let us consider the differences in clinical manifestations. Before resorting to accessory diagnostic methods, such as roentgenograms of the chest and spine or an electrocardiogram, we should carefully consider the characteristics of the pain which the patient presents.

For the sake of an illustration, we might contrast angina pectoris as an example of pain transmitted by the viscerosensory pathways with radicular pain which may originate from any of the causes previously enumerated. Root pain, particularly from osteoarthritis of the dorsal spine, is apt to appear on the chest at the time of life when cardiac pain most frequently makes its appearance. If a radicular pain originates in the left third or fourth dorsal roots which supply the skin over the precordial area, or in the left first or second dorsal roots which supply the skin over the inner arm, it is not infrequently confused with pain of cardiac origin.

Root pains characteristically occur in band-like

zones on the chest, varying from one to several inches in width—wider posteriorly and tapering off anteriorly. This is in contrast to the pain of cardiac origin, which covers a wide area in the precordial region and which when it radiates jumps from one root zone to another without completing the entire distribution of any one spinal nerve. Thus cardiac pain may be referred to the inner side of the arm without ever radiating to the back of the chest to complete the distribution of the nerve root in which it first had its onset. This is not true of radicular pain.

Memory for radicular pain is excellent, even months after it has ceased to be present. The patient will locate and outline with his finger tips the entire band-like zone as though he were drawing this distribution on himself. Memory for cardiac pain is poor. Its borders are outlined vaguely. Its minutiae are described with difficulty. The fingers are not used to locate cardiac pain, but rather the flat of the hand or the fist will indicate the involved area.

The patient's description of root pain is in such terms as "a sharp catch, electric or shooting pain of a moment's duration," or as "a burning, tingling and numbness" which gives the impression of a surface pain with very little depth. Cardiac pain is described as "squeezing, crushing, vise-like and tearing" with the feeling of depth and volume of a third dimension. Cardiac pain resulting from coronary thrombosis is usually constant for its duration and gradually increases in severity until it attains a peak; whereas root pain is usually sharp and stabbing, of a second's duration, and occurs usually in paroxysms. Root pain is frequently preceded, accompanied or followed by paresthesiae.

The associated phenomena, such as nausea, vomiting, sweating, and changes in color—in general, symptoms of shock—encountered in cardiac and other mediastinal reflex pains are not found to occur in root pain, regardless of its intensity.

The factors which act as triggers to set off pain of cardiac origin and radicular pain are different. Physical exertion, excitement, and overeating are frequent precipitating factors in cardiac pain, although it may occur when the patient is quiet or during sleep. Radicular pain is usually precipitated by movements of the spinal column, and exacerbated by coughing, sneezing, yawning, or straining at stool, which temporarily increases the intraspinal pressure. Cardiac pain forces the patient to cease activities while continued activity is no more than moderately uncomfortable with radicular pain and may even afford relief, presumably by relieving the spasm of vertebral muscles.

In conclusion, I would not convey the impres-

sion that we should relax our vigilance concerning coronary arterial disease—certainly not in this age when we have learned that coronary accidents may be ushered in with symptoms far less dramatic and far less frank than those first described, and when we have recognized that coronary accidents are occurring all too frequently in young individuals, among our own comrades. The status of the coronary arteries should be our major consideration when the patient complains of a chest pain unaccompanied by signs of an acute inflammation, but this should not lower our index of suspicion for the other causes of thoracic pain.

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Discussion

DR. GEORGE WILKINSON, Greenville:

Mr. Chairman and Gentlemen: Dr. Baker's paper contains an excellent digest of the differential diagnosis of chest pain. While the presentation is clear, the application is quite another matter. Aside from the history, physical and laboratory findings, one has also the law of probability to assist in making a diagnosis. I have in mind particularly the occupations which entail emotional hazards. Here the vascular bed comes in for much more punishment. Individuals engaged in physical work are more liable to the arthritides. Distinguishing pain of gallbladder origin from that which originates in the coronary, one has the sex panel for guidance. The feminine type of man will be more likely to have gallbladder disease than the masculine type.

PROMISING RESULTS IN HIGH BLOOD-PRESSURE

(H. A. Schroeder, N. Y., in *Science*, Jan. 31st)

Because the substance responsible for some varieties of arterial hypertension may be a simple amine, particularly one containing a phenolic group, a pure preparation of tyrosinase, a phenolic oxidase obtained from mushrooms, was used in animals exhibiting "renal" hypertension. It was found that tyrosinase is effective in lowering raised arterial pressure in rats and dogs when their kidneys are injured.

It appeared necessary to ascertain the effect of this enzyme upon hypertension exhibited by human beings. Seventeen patients suffering from arterial hypertension have been treated by daily subcutaneous injections of varying amounts of tyrosinase for three to four weeks. In fourteen the systolic pressure had been persistently above 200 mm. Hg. and the diastolic above 120. In all but one the blood pressure fell a significant amount—in seven to 140 to 160

systolic, and 80 to 100 diastolic; and in six to 160 to 180 systolic, and 100 to 115 diastolic. In the other three, the respond was less. Three patients in a late stage of the disease were improved. In one there was no effect.

In seven patients whose electrocardiograms were altered a change in the direction of normal occurred. In three the hearts became small as observed in x-ray photographs. In all but one the level of the urea nitrogen in the blood was lowered, but the clearance of urea was unaffected. Symptoms, when present, were relieved. In four, hemorrhagic and exudative lesions were present in the eyegrounds. These disappeared. No change in the ability of the kidneys to concentrate urine was observed.

When injections of tyrosinase were stopped, the blood pressure soon (within three to six days) returned to its previous level. Symptomatic improvement, as well as the improvement in the ocular fundi, lasted for weeks or months.

Injections were painful at times; at others no discomfort occurred. Occasionally moderate fever followed the injections. Allergic reactions at the site of injection developed in three patients.

BLOOD PLASMA RESERVOIR NOW BEING ESTABLISHED

WILLIAM DEKLEINE, M.D., Washington

Medical Director American Red Cross

Abstract of article received March 31st:

Creation of a national reservoir of blood plasma to be used by the Army and Navy for emergency transfusions, as well as for treatment of civilians injured in disaster, is now actively under way. Plasma has definite advantages over whole blood. In traumatic shock and hemorrhage plasma is ideal. In these cases speed is the thing that counts and plasma lends itself to speedy use. It completely eliminates typing or cross-matching, thus saving time and lives. Plasma can be collected and stored at central points for lengthy periods and may be transported any distance. The administration of plasma is very simple.

Last summer the American Red Cross, with the Blood Transfusion Betterment Association, began collecting and shipping plasma to Great Britain. February 1st, 1941, the British Red Cross announced it would be able to carry on from there. While the program was in operation, approximately 15,000 pints of plasma in saline solution were shipped, representing donations from that number of persons.

Plasma is now being prepared in two forms: (1) lyophilized, or dry, powdered plasma which by the simple addition of sterile, distilled water is ready for use, and (2) ordinary liquid plasma. Present plans call for the production of 10,000 units of dried plasma, a unit being equal to one pint of processed whole blood. The amount of liquid plasma to be stored has not been decided on. Liquid plasma has been used with excellent results after months of storage; it is believed that dried plasma, properly packed in a vacuum, can be kept for years.

Processing of whole blood for the production of plasma is being done at the Sharp and Dohme Laboratories in Philadelphia, where the product is also being stored. As need arises, Red Cross chapters will be called upon to enroll donors who will be asked to give a pint of blood each.

The method of preparation and storage is described in detail.

Pulmonary Hemorrhage*

KARL SCHAFFLE, M. D., Asheville

IN 1912 a new medical book appeared, which, because of its unique arrangement, its amazing honesty and the unusual value of its content, together with a style of grace and simplicity, established it as the best-seller in its field for that year. It was Richard C. Cabot's *Differential Diagnosis*. In the chapter on hemoptysis under the causes of this condition, phthisis headed the list. You may remember the diagram—or schema—in which there was a column of the names of diseases or causes, with horizontal lines extending across the page, the length of which indicated the relative proportion or incidence of each. The figures, from The Massachusetts General Hospital, at that time gave tuberculosis as the cause of hemoptysis in 1723 cases; mitral disease 1177; unspecified cause 183; pulmonary thrombosis or embolism 141; pulmonary abscess or gangrene 77; bronchiectasis 58; pneumonia 52; aneurism 22; trauma 17; neoplasm 6.

The most recent addition to my library is Meakins' *Practice of Medicine* of 1940, which gives the causes of hemorrhage as follows:

- (1) Acute inflammatory lesions
 - tuberculosis
 - pneumonias
 - typhoid fever
 - whooping cough.
- (2) Chronic inflammatory lesions
 - bronchiectasis
 - lung abscess
 - lung gangrene
 - actinomycosis
 - echinococcus
 - fibroid pneumonia
 - ulceration of the larynx, trachea or bronchi
 - spirochetel bronchitis
 - bronchial fluke
 - other pulmonary parasites
- (3) Hemorrhagic and blood diseases
 - purpura hemorrhagica
 - hemophilia
 - leucemia
 - scurvy
 - hemorrhagic forms of infectious diseases
- (4) Cardiovascular diseases
 - myocardial failure
 - mitral stenosis or insufficiency
 - hypertension
 - eclampsia

- pulmonary infarcts
- pulmonary thrombosis
- pulmonary embolism
- (5) New growths
 - mediastinal
 - pulmonary
 - bronchial
 - tracheal
 - laryngeal
- (6) Trauma
 - gunshot wounds
 - stab wounds
 - fractured ribs
 - contusions
 - foreign bodies
- (7) Miscellaneous
 - spontaneous
 - vicarious menstruation.

Time does not permit further consideration of those conditions which are less frequently the cause of pulmonary hemorrhage and my own experience has been limited largely to diseases of the respiratory tract, chiefly tuberculosis of the lungs, which has been and still is the preëminent factor in pulmonary hemorrhage, in spite of its great reduction in the last thirty years and the increase in the recognition of heart disease, cancer and bronchiectasis. These last, also pneumonia, spiriochetel and fungus diseases, should be quite easily differentiated with modern equipment. Regardless of the etiology, the immediate treatment is largely the same.

In tuberculosis there are many causes of hemorrhage, chief of which perhaps is the leading symptom, cough. This, of course, greatly increases intrapulmonary pressure, putting a great strain upon the bloodvessels in the vicinity of or passing into the lesion. Next to cough should be placed sudden muscular effort, particularly involving the arms and frequently of no great severity; such as reaching out to the bedside table, to the radio or the bed-lamp. It seems to be quite common in reaching over the head. I remember a man of about sixty, who had reached an apparent cure ten years previously and had resumed his occupation as head of a corporation, who, upon leaving his office noticed that a clerk had neglected to lower a window shade. In a fit of temper he snatched at it and had a sudden severe hemorrhage, which caused a reactivation of his disease. A younger man, nearly well, died of exsanguination from

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

pulling a chair across his room; and I have known of two instances of alarming hemorrhage which occurred during or immediately following sexual intercourse. Vomiting or constipation with straining at stool, and flatulence with upward pressure of the diaphragm, are also causative factors. Emotional crises may play a part. Many times, however, hemorrhage occurs when the patient is perfectly quiet, without any exciting cause. Arteriosclerosis or nephritis with accompanying high blood pressure should be considered but most consumptives have low blood pressure. It frequently precedes, accompanies, or is a substitute for menstruation.

Among the external agents, low barometric pressure and high winds, particularly when combined, should not be overlooked. There was an old Negro at the Fairview Sanatorium of Asheville, who was employed to bathe the male patients. On certain days he would raise his head, sniff the air like a hound, and say, "Pears lak we gonna hab some good hemorrhage weather"! About fifteen years ago an excellent paper was written by a chest specialist of the Southwest on the incidence of pulmonary hemorrhage during sandstorms. As to seasonal variations, the late winter and early spring have been cited, but there does not appear to be any particular seasonal influence in western North Carolina.

At St. Louis, two years ago, my friend Howard Marcy read a paper on this subject before the American College of Chest Physicians. On opening the discussion I was mean enough to say that there was one factor which it was only natural for a man from Pittsburgh to overlook, and that was exposure to the rays of the sun! This is something that patients must be warned against in view of the spread of the modern sun cult from popular magazines and newspaper articles, the advocacy of the use of vitamin D by the salesmen of alpine lamps, and the migration to southern beaches in winter as well as to northern shores in summer. One patient with but slight involvement had a small hemorrhage every morning for over a month, after proudly acquiring a handsome sun-tan of his chest in Florida.

The symptoms which precede or accompany pulmonary hemorrhage are few but characteristic, consisting of a sense of oppression in the chest, with or without slight pain; a cough-provoking tickle and, at times, a feeling of something giving way, followed by warmth in the throat and a salty taste. The pulse is rapid and the face pale or cyanotic. The blood is usually bright-red and frothy but may be somewhat dark, depending upon its source. After the first day it is brown and may

be granular. A slight gurgling or a moderate bubbling sound may be heard over the site if the bleeding is copious; but this is often absent. Some patients are able to indicate the point of origin.

Now, what is the mechanism that brings hemorrhage about? According to the pathologists, hemorrhage may occur at any stage and in all forms of the disease. In the early stages slight bleeding is due to congestion of capillaries which supply the area involved, with leakage into the alveoli and bronchioles, or it may be due to the erosion of a small pulmonary vein in the process of softening. Large hemorrhages may occur from small miliary aneurisms of pulmonary arteries in the walls of young, rapidly-developing cavities. Profuse and suddenly overwhelming hemorrhages may occur from larger aneurisms or from a complete rupture through the wall of an artery hanging free within an old cavity, unsupported by surrounding tissues. Tuberculous ulcerations of the bronchi occasionally erode branches of the bronchial arteries or of the accompanying pulmonary arteries. The bleeding from congestion or leakage from small vessels is found more frequently in the exudative form, while the severe hemorrhages are more common in the proliferative form. In the latter, bleeding may occur even in the absence of cavitation, due to the loss of elasticity of the lung tissue, with increased pressure on its rigidly confined vessels from cough or labored breathing. In old cases in which healing has progressed to the final stage of calcification, the loosening and detachment of sharp pieces of calcium results in laceration of surrounding tissues, with varying amounts of hemorrhage until the "lung stone" emerges from a cavity, dense mass of fibrous tissue or an adjacent lymphnode into a bronchus and is coughed up. The blood from pulmonary veins is bright-red, as they carry the arterial blood, while that from the pulmonary arteries is dark-red and more profuse, occurring in the advanced stages of the disease. The point of origin is most frequently in the lower part of the upper lobe. Charr and Savacool¹ reported a series of autopsies with postmortem x-ray studies of barium-injected lungs, at White Haven, Pennsylvania, in which the source was found to be the first branch of the pulmonary artery, which corresponds to a point at the level of the second costal cartilage, slightly mesial to the parasternal line; while Eloesser and Wood² of San Francisco, using a similar technique, found that in both tuberculosis and cancer, profuse and persistent bleeding was from the bronchial arteries, which become dilated and tortuous when the pulmonary arteries are occluded.

The incidence of hemorrhage in cases of pul-

monary tuberculosis has been reported as from 30 to 80 per cent. It was 47.6 per cent in nearly 6,000 cases at The Phipp's Institute. It is fatal in from 1 to 5 per cent, the relatively low mortality being due to a natural tendency to stop with lowering of the blood pressure and coagulation from contact of the blood with the tissues and exposure to air. The possibility of its more general occurrence is also prevented in spite of ulceration, when this is overbalanced by the reparative process of fibrosis and the common occurrence of thrombosis. Males are more frequently affected than females, probably due to their greater physical activity, and children are rarely affected, unless victims of the adult type of involvement. The pneumococcus and streptococcus have been found responsible for hemoptysis in epidemics of acute colds, occurring in sanatoria.

What are the results of pulmonary hemorrhage? They range from the inconsequential to the shockingly tragic! Many patients suffer no ill effects, even when the bleeding is considerable; while it has been my misfortune to arrive on the scene of a fairly large number of almost instant deaths from suffocation. Surviving a severe hemorrhage, a patient may go into a state of shock with all of its usual manifestations. If the hemorrhage is profuse or protracted, there will be a secondary anemia; if a clot plugs a bronchiole there will be atelectasis,—if a bronchus, massive collapse. If blood has been inhaled during hemorrhage there will be fever for a few days from absorption and then possibly subsidence, with no further disturbance. Unfortunately, however, aspiration pneumonia may follow, either in a small area or quite extensively. This may be nonspecific and resolve within a reasonable time, or it may be a tuberculous pneumonia with delayed resolution. If pyogenic organisms are present—abscess formation is likely to occur. With any of these results there is likely to be spread of the disease process. Reiser,³ from observation at the Metropolitan and Sea View Hospitals, New York, states that the most frequent type of post-hemorrhage spread of the disease, is by diffuse focal dissemination, which occurred in two-thirds of his cases, most of which were fatal. Finally, if the patient manages to survive all complications, he may die of exhaustion!

When it comes to treatment, we encounter among the earlier writers attitudes which vary from the didactic advocacy of certain measures and drugs to an almost helpless fatalism. Those who express the latter view believe that a slight or moderate bleeding still stop of its own accord (in spite of what is done), while an overwhelming

hemorrhage cannot be stopped—whatever may be done. The list of remedies set forth by the former is, to our present knowledge, both amusing and pathetic—lead, iron, digitalis, aconite, veratrum, the nitrites, adrenalin, ipecac to induce vomiting, typhoid and other vaccines, rattlesnake venom, venesection and purgation! Evidently the old fallacy of *post hoc propter hoc* was responsible for the claims of success from such procedures. We need not feel any undue superiority to our forebears, however, as the future will probably prove our own ineptitude. Illustrative of this is the fact that in one private sanatorium, with a capacity of not more than twenty patients but with six or eight physicians in attendance, the nurse in charge had an emergency chart containing the standing orders for immediate use in case of hemorrhage. There were as many orders as there were doctors—each one different from the others!

The best measure which has come down to us from the experience of previous generations—is rest. This should be absolute, in bed, with urinal and bedpan, or drawsheet; spoon-feeding (of cracked ice at first and later cool liquids and soft foods), with the constant supervision of a special nurse to carry out these orders, and to enforce silence and immobilization upon the patient and quiet upon the environment. Her vigilance at night, particularly during the early morning hours when the usual evacuating cough begins, is most important. Next is the judicious administration of morphine. One-eighth of a grain is sufficient in the majority of patients to quiet the mental and nervous excitement, to slow the pulse and to modify the cough and relieve distressing symptoms within the chest, without causing retention of clots by suppressing the cough entirely or by inducing stupor. Twice this dose when the patient has been accustomed to taking considerable codein—but no more should be given than this initial dose. Often a half-grain of codein is sufficient.

The mention of morphine suggests the drug which so frequently is given with it, in this and other conditions—atropine. When I came to Asheville in 1926, to join the staff of the late Dr. William L. Dunn, I was told that the standing order for hemorrhage was morphine, $\frac{1}{8}$ gr. with atropine, 1/30 to 1/25 gr.; followed by 5 c.c. of coagulin. My amazement at the size of the dose of atropine was met with tolerant smiles and I was informed that a small dose, 1/100 gr., was ineffective, as it caused a vasodilatation, while vasoconstriction followed the larger dose. In view of the very broad clinical experience of Doctors Dunn, Colby and Battle, I adopted the procedure without question and have continued it ever since. Re-

cently, however, I began to wonder about the efficacy of this drug, particularly as I found nothing relative to its use in hemorrhage in such recent works as those of Goldberg, Beckman, Meakins, Cecil or Musser. On searching farther, I found that Klebs (who came to Asheville in 1894, remaining several yvars,) quotes, in his *Tuberculosis* (1909), N. H. Johnson and R. H. Babcock as advocating "atropine, gr. 1/25, in pulmonary hemorrhage"; Bonney (1908) advised "1/50 gr. in urgent cases," citing its production of redness of the skin as evidence of peripheral dilatation incident to vasomotor paresis, with consequent reduction of pressure in the pulmonary circulation"; Lawrason Brown,⁴ spoke of 1/25 gr., "having some empirical basis for its employment"; while in a German publication, Stepanova⁵ stated in 1931, that "atropine decreases vagal tone with a consequent decrease in spasm of the muscles of the small bronchi."

Wishing for the latest information, I wrote to Doctors Alfred Richards, Carl Schmidt and Isaac Starr, Professors of Pharmacology and Therapeutics at the University of Pennsylvania, and received replies from each to the effect that they could see no reason for the employment of atropine for this purpose, as it raises blood pressure and produces dilatation in the general circulation, while the physiology of the pulmonary circulation is still obscure. I still crave advice and will appreciate discussion of this subject.

Coagulin or fibrinogen is thromboplastin and has seemed to be effective in the more protracted hemorrhages and in the prevention of recurrence. I have seen no unpleasant reactions, as in the use of horse serum.

I have used considerable calcium lactate and glucinate orally to prevent recurrence, but am not certain of the results. I have not used parathyroid extract.

When vitamin K became available I hopefully tried it on some stubbornly recurrent cases, only to be greatly disappointed. Later, I learned that this agent was active only when there was a deficiency of prothrombin, as in hemorrhagic jaundice so well described by Nygaard.⁶

The latest entry in the field is an extract of shepherd's purse, containing the active principle of oxalic acid and related di-carboxylic acids for intramuscular and intravenous administration. My associate, Max Riesenberg, a qualified technologist, has demonstrated that within an hour after its injection coagulation time is reduced, as shown in the accompanying table.

As to physical measures, I have never ligated the extremities (which may be a useful proce-

dure); and I wish to condemn the common resort to the ice-bag on the chest as conducive to what we most fear—increased congestion and pneumonia. As to its so-called psychic effect, it is usually depressing and unpleasant to anemic persons with low blood pressure.

Artificial pneumothorax has been eminently satisfactory, when successful. I have felt like cutting a notch in the frame of the apparatus for every life saved! Care is required, however, to avoid shock and the rupture of pleural adhesions by introducing air too rapidly or in too great an amount, although I have given as much as 1800 c.c. at one time, without harm. In addition to capable thoracic surgeons, we have three excellent bronoscopists in Asheville, over the shoulders of whom I have enjoyed peering at various times. When the bleeding point is visible on the bronchial mucous membrane, the topical application of 25 per cent silver nitrate has proved effective, but the treatment may have to be repeated in some cases.

Surgery—from phrenic nerve crushing, through thorocoplasty, to lobe ligation and lobectomy—should be done earlier than it usually is. It is unfair to put a surgeon on the spot, in a desperate situation, to perform as rapidly as possible an operation the indications for which should have been recognized months before.

The treatment of the complications may be summarized as follows:

For shock and anemia the safest and quickest restorative is transfusion—if this is not available. intravenous saline or glucose, particularly as food is withheld from 24 to 48 hours. Stimulants should be avoided at first. Liver, molasses, ferrous sulphate and arsenic may be given later.

For atelectasis we have the bronchoscope.

For pneumonia and lung abscess oxygen, sulfathiazole or sulfapyridin orally, or, if nausea is present neoprontol intramuscularly (watching for anuria from the precipitation of the salts of these drugs within the renal tubules; theocin combats this). The sputum should be typed for the possibility of pneumococcal pneumonia. This takes but 15 minutes by the Neufeld method and indicates the appropriate serum, if such addition to the drugs mentioned seem necessary. Counter irritants are helpful, as the old-fashioned mustard plaster, in spite of fears of recurrence of hemorrhage. Ammonium chloride or citronin thins tenacious sputum.

An abscess may be drained through the bronchoscope, or if out of its reach, attacked surgically after becoming well localized but before its walls become too dense.

COAGULATION TIME

	D.H.	L.M.	R.N.	A.R.	R.M.	I.M.	L.Z.	E.Y.	A.MCC.	C.S.	M.M.	J.R.	J.K.
Before injection	7 m.	5½ m.	6½ m.	10½ m.	14½ m.	13¾ m.	12½ m.	4 m.	7 m.	7 m.	3¾ m.	4 m.	4 m.
1 Hr. later	5 m.	2¼ m.	4 m.	6 m.	4 m.	4¾ m.	3 m.	2¾ m.	3½ m.	3¼ m.	2½ m.	2½ m.	2 m.
2 Days later	2½ m.	3½ m.	2½ m.	3 m.	5¾	4 m.	3¾ m.	3¾ m.	2½ m.	3½ m.	2½ m.	2 m.	2½ m.
4 days later				5 m.									

Finally, for exhaustion—that anxious sinking spell, when the pulse becomes faint and rapid and the temperature drops to subnormal, with gasping respiration and unconsciousness—strychnine may be useful but coramine is a much more quickly-acting circulatory and respiratory stimulant which may be given safely in doses of 1 c.c. every hour for six hours, with, at times, results that appear miraculous—almost literally, raising the dead.

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CEREBRAL HEMORRHAGE

The diagnosis of cerebral hemorrhage or thrombosis requires the consideration of injury, diabetic acidosis, hyper-insulinism, post-epileptic stupor, Stokes-Adams syndrome, poisoning of various kinds, uremia, brain tumor or abscess, alcoholism and general paresis. The history of the attack, the examination of the patient and of the blood, urine and spinal fluid will assist. Between hemorrhage and thrombosis: Hemorrhage is generally hidden in onset while thrombosis is slow; spinal fluid pressure is usually increased in hemorrhage, and the fluid is more likely to be bloody or xanthochromic. In thrombosis the majority of the cases will show a normal or only slightly elevated spinal fluid pressure, while the fluid will only rarely be blood-tinged or xanthochromic. In any patient with a bloody spinal fluid, spontaneous subarachnoid hemorrhage must be considered. In this condition the onset is usually sudden severe headache, pain down the neck and into the arms, frequent vomiting, rapid development of a stiff neck, a positive Kernig sign and an increasing coma. Typical hemiplegia is not present, but weakness may be noted on one side of the body. The spinal fluid is under increased pressure and is bloody and xanthochromic.

1. P. L. Stier, Fort Wayne, in *Jl. Ind. State Med. Assn.*, Mar.

Treatment of the apoplectic attack is symptomatic with good nursing. Bed with the head slightly elevated; if respiration is stertorous, a prone position may give relief. The position should be changed frequently to prevent pneumonia and bed-sores. Venesection, an enema, and an ice bag to the head may be of some value. If the patient is restless, sedatives will be necessary, by hypodermic injection or by rectum.

Care should be used in attempting to give anything by mouth, and tube feeding may be necessary if the patient must have nourishment. As early as possible, probably in the first week, passive exercise and massage should be started. If the patient has any power at all, he should be encouraged in practicing active motion. He should be in bed for at least three weeks with even the mildest stroke. During convalescence, iodides are usually started. Certainly the patient should be warned against over-work, excitement, worry, anger and sudden exertion.

USE OF COBRA VENOM FOR RELIEF OF INTRACTABLE PAIN

(W. B. POOLE, Oklahoma City, in *Med. Rec.*, April 16th)

In the present Series, 23 patients suffering from intractable pain of advanced cancer were treated with cobra venom. In each case the initial dose has been 2½ mouse units (a mouse unit being the amount of venom necessary to kill a mouse weighing 22 grams in 18 hours after intraperitoneal injection). On the second day 5 mouse units were injected. This dose is given daily until there is relief of pain, or until it is fairly certain that there is to be no relief. Once relief is obtained, the dosage is regulated to the individual case in order to afford the maximum relief with the minimum amount of the cobra venom. If, after a trial of 10 injections, there is no appreciable relief of pain, cobra venom therapy is discontinued.

My meager experience in treating pain, other than that of malignancy, with cobra venom has been unsatisfactory.

Cobra venom does not relieve pain in every patient treated. The fact that it has relieved pain in 65% of these 25 patients is reason for it being included in our armamentarium for treating advanced cancer. When a patient has an almost even chance for complete relief from the agony of advanced cancer, then giving every such person a therapeutic trial is demanded in order that some of these unfortunate people may be allowed to live out their remaining time in relative comfort even though their body is being destroyed by cancer.

An Analysis of Fifty Cases of Shock Treated with Plasma*

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NOTWITHSTANDING the unprecedented progress in surgery within the past few decades, some very specific and unsolved problems remain to keep it within the realm of art. Mortality has not reached the irreducible minimum. Embolism, massive pulmonary collapse, shock, and hemorrhage still take their toll. In this brief paper we will discuss Shock:—

In spite of the careful preparation of the patient, the selection of anesthetic and the anesthesiologist, shock will occasionally inject itself into an otherwise orthodox case.

The great amount of effort expended to determine the nature of shock, both in regard to its etiology and physiological pathology, has left a definite impression that shock is concerned largely with the behavior of the capillaries under certain stimuli. Moon, Blalock, Scudder and others seem to agree that dilatation of the capillaries, together with abnormal permeability, reduces the volume of moving blood in the circulatory system and permits the escape of plasma in the perivascular spaces. The blood remaining in circulation is concentrated and its volume is less. We find the specific gravity higher, the red cells and hemoglobin relatively increased and the protein content lower. Moon defines shock as follows: "circulatory deficiency, not cardiac nor vasomotor in origin, characterized by a decreased blood volume, decreased cardiac output (volume flow), and by an increased concentration of the blood."

The cause of shock has been and still is the subject of speculation and investigation. It suffices to state that the mechanism of shock is supposed to be initiated by the release or elaboration of a substance similar to histamine, or by an excess of potassium salts. An unnamed hormone of the adrenal, or some other ductless gland, may be a contributing factor.

As practical clinicians we know that psychic or mechanical trauma are exciting agents and to treat shock successfully, we must recognize it promptly. Blood pressure has been a very satisfactory index. A systolic pressure of 80 mm. mercury has been generally regarded as the lowest level compatible

with the wellbeing of the patient, and is often referred to as the critical level. We regard the relative fall of pressure quite as important as the actual fall. For instance, a patient whose initial systolic pressure at operation is 180, and falls to 100 before the operation is completed, is just as much in shock as one whose fall is from 100 mm. to 70 mm. We have used the systolic and diastolic pressures, together with the pulse rate, as our chief guides in the diagnosis of shock, with due consideration given to subnormal temperature, cool, moist and perhaps cyanotic skin. We have used the laboratory to check blood concentration, and while we found the counts, the hematocrit and specific gravity were fairly constant and early indices, we do not believe they furnish any more reliable data than the blood pressure and the pulse rate, notwithstanding the time and labor the tests require.

From the various services of a municipal hospital, we have chosen fifty consecutive cases of shock treated with plasma in which data were available from which some deductions could be made. While this is a small number, it represents a large amount of surgery. The cases were grouped as follows:

General surgical (operative).....	13
Gynecological	4
Traumatic	5
Intestinal obstruction	5
Acute hemorrhage	3
Thoracoplasty	5
Cranial operations	2
Obstetrical accidents	6
Sepsis	3
Burns	3
Hepatic deficiency	1
Total	50

In order to put at rest any claim that plasma is a cure-all, it should be stated that there were ten deaths in this series. Without entering into the details of individual cases in this entire group, some general observations are in order:—

We found in shock the following averages:

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

Average fall in systolic blood pressure, 60 mm.

Average increase in pulse rate, 52 per min.

Average amount of saline plasma used, 800 c.c.

Average recovery in systolic blood pressure, 47 mm.

Average slowing of pulse in recovery, 29 per min.

Average time to secure these changes in pulse and pressure, 73 min.

The indications for the use of plasma were the pulse rate and the presence of shock, as indicated by the blood pressure. If we found that the blood pressure declined rapidly or the hemorrhage was obvious, the plasma was used before the critical level of blood pressure was reached. In the traumatic cases, those admitted from the street following an injury, the pressure in some cases was too low to register, and plasma was administered without delay with the thought that it was the most valuable agent in shock. We wish to emphasize that secondary shock has all the implications of primary shock, and unless the patient is kept under close observation for twenty-four to forty-eight hours after trauma or operation, secondary shock may prove a serious or fatal complication. We found it necessary in many instances to repeat plasma in twelve or twenty-four hours, but rarely later. The response to plasma transfusion was prompt and sustained in most cases, but as stated previously, neither plasma nor any other remedy can restore the vital functions in cases in which the cause has not been controlled. In our ten deaths, two were traumatic shock, two were intestinal obstruction, one was a cranial operation, two were septicemia, one was a liver toxicity, and in the postoperatives, one from pneumonia and one from alcoholism and fractured hip. No attempt has been made to analyze the individual cases, but out of this series very definite convictions became evident to those who assumed the responsibility for their care.

There was unanimity of opinion that the best remedy for shock, when all considerations were weighed, was undiluted or saline-plasma. In some instances, notably in the presence of hemorrhage, whole blood was undoubtedly the best antidote. However, if time be an element, or if a reaction

would add to the gravity of the situation, whole blood suffers by comparison with plasma.

The older the individual, and longer the duration of shock, the larger amounts of plasma are necessary. Little permanent benefit may be expected from plasma in shock associated with sepsis, unless the sepsis can be favorably influenced by other medical or surgical measures. The primary improvement in shock was noted in the elevation of both the systolic and diastolic pressures. The pulse was much later in resuming its normal rate than the restoration of blood pressure to approximately its normal level.

The shock of burns responded more slowly, possibly because the loss of protein is a progressive process, spread over a number of hour or days. In such cases smaller amounts of plasma should be given at frequent intervals for a longer period, guided very much by the blood protein content.

We have been using plasma at the Gallinger Municipal Hospital almost two years, and during that period have administered more than 800,000 c.c. of saline-plasma, ninety-five per cent intravenously, totaling over five-hundred transfusions. We have given as much as 4000 c.c. in one transfusion and as much as 40,000 c.c. to one patient over a period of several weeks. There were five reactions, none of which was serious. There were one-hundred and twenty-five cases of shock in various degrees, fifteen cases of burns and twenty-five cases of hypoproteinemia due to various causes, and fifteen cases of impaired liver function.

We have had no experience with blood serum or concentrated plasma. We are more concerned with a method whereby most hospitals can prepare their own plasma and have it available at all times.

While we have stressed the use of plasma in shock only, there are many other conditions, both medical and surgical, in which plasma can be used with the utmost benefit. There are many diseases associated with hypoproteinemia in which plasma is positively indicated. In the premature infant it has been life-saving. Dr. Elliott has done so much to perfect a method of preparation whereby every community that has a hospital can have plasma available, that it would be almost a calamity if the institutions of this country failed to profit by his work.

Blood Plasma*

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THE view was expressed in 1936 in a preliminary report in *Southern Medicine & Surgery* that blood plasma could be used as a substitute for whole blood, that it could be preserved for long periods, that it could be used without typing and cross-matching. Extensive experimentation developed equipment for the aseptic collection of blood² and its conversion to plasma^{3,4}. Numerous titrations of blood belonging to groups A, B and O for agglutinin content, and animal experimentation, indicated that plasma could be administered without cross-matching, even to incompatible recipients. Long storage was found to be safe and satisfactory. Blood plasma has been transfused instead of whole blood in numerous diseases, and with effectiveness equal to that to be expected from administration of whole blood.

It is now possible to state without reservation that the use of blood plasma as a substitute for whole blood has passed through the period of experimentation and that adequate clinical trial has abundantly proved its great value. It is recognized as a safe and effective therapeutic agent. This statement is possible because the original investigations have been adequately confirmed by numerous physicians and surgeons in many institutions in the United States, Canada and Great Britain.

Blood plasma has been used instead of whole blood with entire success in the treatment of shock from trauma, hemorrhage, operation, obstetrics and burns; in the circulatory failure of medical as well as surgical diseases; and in the treatment of hypoproteinemia.

Thousands of transfusions of blood plasma have been administered, without typing or cross-matching, many to patients whose blood was incompatible, without a single reaction due to incompatibility. The chill-and-fever reactions which so commonly followed the transfusion of whole blood a few years ago have been materially reduced. Most hospitals using blood plasma report an incidence of chill-and-fever reactions below 1 per cent.

Blood plasma has been transported over long distances without special precautions and when subsequently administered was found to have retained therapeutic effectiveness without having developed toxic properties.

Clinical improvement without untoward reaction has been observed following the transfusion of

plasma stored at room temperature for periods up to 26 months. Storage at refrigerator temperature is probably optimum, but plasma can be stored for long periods at room temperature without becoming unfit for use.

Reaction has not been observed following transfusions of unwarmed plasma. In several instances, transfusions of 275 c.c. of plasma in 25 per cent diluent has been completed within 10 minutes after the bottles were taken from the refrigerator.

In some diseases the intramuscular and subcutaneous administration of plasma has been found to be equally effective as the transfusion of blood plasma into premature infants, babies and small children whose veins are difficult to enter. Patients of this age who are in dire need of blood often have normal red cell counts. Their need is for plasma rather than for red cells, and plasma can be administered intramuscularly in most cases as effectively as intravenously.

The original investigative work on blood plasma was done on the basis of its use as a substitute for whole blood. However, it should be emphasized that blood plasma is not a substitute for whole blood. It is the major fraction of blood. Blood is composed of approximately 55 per cent plasma and 45 per cent cells. In the past the indication for transfusion was on the basis of the need for red cells and plasma was rarely considered. Red cells are of tremendous importance, but they have but one function—that of conveying oxygen from the lungs to the tissue cells. When an animal is deprived of oxygen for a period of little longer than three minutes, death occurs from oxygen lack. Also when tissue cells are deprived of oxygen for any period of time damage or death of the cells occurs.

More, red cells will not restore osmotic pressure or materially increase the blood volume or blood pressure, and cannot circulate effectively. Blood plasma has many functions; not the least important of which is the function of maintaining a colloid osmotic pressure, blood volume, blood pressure, and *circulation of red cells*. Red cells cannot carry out their function unless they are circulating, and plasma volume must be adequate to maintain circulation.

The whole of the vascular system—heart, blood vessels and capillaries as well as the blood constituents—must be given earnest consideration. The

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

heart is nearly a pumping and propelling mechanism; the arteries and veins supplement propulsion and act as a conducting system. The vital function of the blood is carried out in the capillary bed. There are thousands of miles of capillaries in the body. The capillary bed is so extensive that if all the capillaries were functioning at a given time practically all the blood in the body could be segregated there. However, only a part of the capillaries are active at any given time. They are so small that red cells pass through most of them in single file and there is a capillary in close proximity to almost every cell in the body. Normally, the capillaries are freely permeable to water, crystalloids and electrolytes. Because of this free permeability of the capillary walls an equilibrium between the blood and tissue electrolytes and crystalloids is established by diffusion. Normally the capillaries are impermeable to proteins, with the possible exception of a few in the liver. Blood plasma protein is present in a concentration of approximately 7 per cent. Tissue fluid protein averages 0.2 per cent.

The many investigators of shock, since Latta first used the term in 1795, have made many observations and have advanced theories to explain the cause of shock. While most of these observations and theories partially explain shock, none of them seems to be complete in itself. There are however three observations that have been made by all investigators of shock; namely: (1) decreased cardiac output of arterial blood, (2) hemoconcentration, (3) reduced blood volume.

Reduced cardiac output of arterial blood and hemoconcentration are manifestations of reduced blood volume. Thus, the one constant observation of importance made by all investigators of shock is reduced blood volume. The mechanism of this reduction seems best explained by Moon, who has demonstrated that the capillary permeability occurs not only in the local areas but generally throughout the body. He, as well as others, explains this capillary permeability to proteins on the basis of capillary damage by the toxic action of substances released from traumatized areas, tissues anoxia, poisons and bacterial toxins.

Normally, the cell in need of oxygen elaborates a substance which is capable of stimulating the adjacent, inactive capillaries to activity. When oxygen is supplied to the cell, elaboration of the substance is discontinued and the capillaries return to the resting state.

When blood volume and blood pressure are reduced so that circulation fails and oxygen is no longer delivered in adequate quantities to the tissues, this substance is elaborated in large quantities,

and the capillaries generally become permeable to proteins. Protein loss may be very great and blood volume quickly reduced. When tissue is traumatized or burned, the substance capable of dilating capillaries is produced in large amounts, and capillary damage is extensive, particularly in the traumatized and visceral areas. When bacteria destroy tissue and elaborate toxins, decomposition products of damaged tissue as well as the bacterial toxins, act on capillaries to make them permeable to proteins.

Moon has called attention to the similarity of shock from surgical disease and circulatory failure of medical diseases. Both are characterized by reduced blood volume, blood pressure and clinical manifestations characteristic of shock. The clinical manifestations of traumatic shock and hemorrhagic shock are identical, although their mechanism may be different.

In traumatic shock without hemorrhage, there is a loss of plasma from the blood vessels through permeable capillaries into the tissues. In hemorrhagic shock, there is a loss of cells and plasma from the body followed by a loss of plasma from the capillaries into the tissues. Loss of blood from the body is not important unless shock occurs. In severe hemorrhage there is seldom a loss of red cells sufficient to cause death if the remaining cells can circulate adequately. The anemic patient with a million red cells per cubic millimeter is seldom in danger of death from anoxia or shock. On the other hand, the patient who has lost half his blood volume by rapid hemorrhage is in immediate danger of death from shock. The anemic patient is in no immediate danger because the plasma volume is adequate to maintain circulation of his million red cells per cubic millimeter; whereas the patient suffering from rapid hemorrhage is in immediate danger from anoxia and shock in spite of the fact that an adequate number of red cells remain. Here the plasma volume has been reduced to the point where circulation of red cells is no longer adequate.

Experimental as well as clinical evidence conclusively proves that blood volume can not be restored or maintained with crystalloid and/or electrolyte solutions. Red cells which do not create colloid osmotic pressure are not capable of materially increasing effective blood volume or blood pressure. Only a colloid solution is capable of restoring and maintaining blood volume and blood pressure. Blood plasma is the most effective colloid solution available.

Plasma cannot be effective unless it is used in adequate quantities. Time is an important factor and in desperate cases we urge early and rapid

administration. Usually we have found the 500 c.c. unit of whole blood, or its equivalent in plasma inadequate. The quantity needed is the amount which will restore the blood volume and blood pressure to normal. This may amount on rare occasions to several liters.

The following case illustrates the advantages of an available blood substitute administered directly from the refrigeration without cross-matching.

Case Report

A white man, aged 26, was taken to the operating room of the Rowan Memorial Hospital, at 9 a.m., April 4th, 1941 for removal of a large tumor of the right kidney. Transperitoneal nephrectomy was started under spinal anesthesia at 9:15. Difficulties were encountered and the spinal anesthetic was fortified by ethylene gas. At 9:40 following some trauma and moderate hemorrhage, the patient appearing to be in deep shock, 275 c.c. of plasma in 25 c.c. of diluent, taken directly from the refrigerator, was administered as rapidly as possible by gravity. A second bottle was started as soon as the first had been administered and subsequently a third bottle containing 450 c.c. of plasma in 500 c.c. of diluent was given. Considerable recovery from the state of shock was noted but it was deemed advisable to give more plasma. A bottle of dried plasma, restored with distilled water to its original volume—250 c.c.—was infused.

The first four bottles of plasma—1225 c.c. in 550 c.c. of diluent—were administered in about one hour. The patient's condition was improved but as the operation progressed the blood pressure dropped again. By this time two 600 c.c. collections of blood were ready. Both bottles were infused during the next 40 minutes. Operation was completed by 11:35 (in 2½ hrs.) and the patient returned to his room with normal blood pressure, good pulse and apparently out of shock. The patient had received plasma and whole blood equivalent to 3650 c.c. of whole blood.

All went well until 4.30 p.m. when the patient showed signs of secondary shock. Blood pressure had dropped to 80/40, pulse rate was 136 and the skin was clammy. An infusion of 600 c.c. of serum was started and its administration completed in one hour. At the conclusion of the infusion blood pressure was 120/65 and the pulse 84. The patient did well through the night but the next morning appeared to be in shock. The blood pressure had dropped to 80/50 the pulse rate increased to 140. An infusion of 600 c.c. of blood serum was started and administered as rapidly as possible. The symptoms of shock were rapidly relieved and at the conclusion of the infusion the patient's condition appeared much improved.

This patient received in 24 hours a total of 2425 c.c. of blood plasma and blood serum, and 1200 c.c. of whole blood the equivalent of 6000 c.c. of whole blood. While this seems to be very large quantity we felt that less would have been insufficient. The patient's blood group was A; the blood given was group O; the plasma and serum pooled, therefore mixed. All of it, with the exception of the dried plasma, was administered directly from the refrigerator without warming.

The patient started voiding after 26 hours and made an uneventful recovery. He was discharged May 3rd 19 days after operation.

CONCLUSION

(1). Blood plasma has many advantages over

whole blood.

- (2). These advantages would be unimportant were not blood plasma as effective as whole blood
- (3). It is suggested that the reduced blood volume which occurs in shock is due to a loss of plasma rather than loss of red cells, even in hemorrhage.
- (4). Therefore, restoration of blood volume by the transfusion of plasma is logical.

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Discussion

DR. J. M. FEDER, Anderson: Mr. President and members of the Tri-State Medical Association: I would ask your indulgence to permit me to step out of character for a moment and extend to this organization an invitation issued by the Anderson County Medical Society to make Anderson, South Carolina, the meeting place for the next Annual Convention. I have filed a written invitation with your Secretary, and letters from other officials, confirming this invitation, are in the mail. A warm welcome awaits you.

To proceed with my discussion, a year and a half ago, it was my good fortune to be commissioned by the staff of the Anderson County Hospital to conduct an investigation into blood plasma and blood banking in general, and their adaptability to an institution of the type of ours in particular. During the course of this survey, I made trips to several transfusion centers and wrote many letters and received sufficient replies to form a rather voluminous compilation. The men at Memorial Hospital in New York were kind enough to place their data at my disposal, and Dr. Ravdin of the Department of Research Surgery of the University of Pennsylvania and one of his associates, Dr. Florsdorf, have been generous in furnishing me with the results of their extensive experience with whole-blood transfusions, with plasma transfusions, and with drying and preserving plasma in powdered form. Quite naturally, I have discussed this matter a number of times with my good friend, Dr. John Elliott. After evaluating all available data, I rendered a report of my findings in an editorial in the February *Bulletin* of the Anderson County Hospital. Copies of this editorial will be distributed to those interested at the close of this discussion.

At this point, I want to say a few words about Dr. Elliott. You will recall that Fulton developed a boat that went up the river without oars or sails.

On that memorable hot August day in 1807 when the *Claremont* successfully negotiated its first trip, several who had dreamed of such an accomplishment said, "Well, I thought of that before, Fulton stole my idea." But Fulton made the first successful trip by steamboat. Both Dr. Elliott and I grant you that other men had thought of separating plasma from the cells, and administering this plasma to a patient. That, we do not deny, nor do

we question the claims of those who make them. But these facts are self-evident, confirmed beyond question or doubt by the investigation just completed, and this I want read into the records being inscribed here today: Dr. John Elliott deserves absolute and undisputed priority in making blood plasma available on a nationwide basis and in carrying out research that that end might be achieved.

Able speakers have amply elaborated upon the physiology and indications for plasma transfusion. The only point that I desire to stress is that we must do something about making it more generally available.

We are all keenly aware of the fact that the greatest need for available plasma in emergencies is in rural areas, remote from hospital facilities. Here, plasma could be used on the spot without the loss of time and in the absence of the technical skill required to match donors.

In the beginning of the preparation of blood plasma some was processed by qualified men working under ideal conditions; in other instances, this important task was relegated to ill-trained technical helpers. The effects of some plasma were good, while its administration in other instances proved disastrous. A common fault was excessive handling of the blood and finished product by an open method. My own organization tried this and found it utterly impossible to prepare a suitable product in the atmosphere of the general laboratory. It is possible that this work could be done in a specially prepared room. That is the Memorial Hospital's approach in preparing the substance for shipment to England. We have been informed that even under these near-ideal conditions contaminations are not unknown.

Dr. Elliott has given us a method of procedure in which the blood and processed plasma are not exposed to air-borne contaminants. He has blazed the trail toward simplicity and if we follow in his footsteps and approach the subject from a wholesale standpoint, in only a very short time, plasma will be available to all who require it. Dr. Elliott once made the statement that the problem is one for the pathologists of the nation, and that in many instances they have shown but little enthusiasm in meeting it. I grant that this is true. I possess enthusiasm to a high degree for the carrying on of this work, but I am an extremely busy man with a myriad of duties. I suppose my case is typical, the day just does not have enough hours. I positively do not have time to supervise every step required in the successful processing of plasma. I do not feel that the average overworked pathologist in the average general laboratory is in a position to successfully meet the situation.

What is the answer? You have given a practical reply right here in North Carolina in the form of your Plasma Center. You are approaching it as it should be approached: on a statewide basis. It is my hope that other states will follow your excellent example until there is at least one Plasma Center in every state in the nation. It was my impression from the investigation just completed that the proper approach must be on a statewide or even a nationwide basis, using voluntary donors, the entire setup under the direct supervision of one dynamic executive supported by some philanthropic organization, such as the Red Cross, and sponsored by some interested commercial agency. I hope that the representatives of the several states meeting here today will go to their respective medical societies and say: The time is ripe to act, we want a State Plasma Center.

The policy employed by the North Carolina Center appears to me to be quite fair and one that all could profit by copying.

In closing, I want to reiterate the single point that ample transfusion and plasma facilities are available in

the large medical centers. This same availability must be made applicable to the most remotely situated practitioner of medicine. Then, and only then, can we truthfully say that plasma transfusion has come into its own.

Gentlemen, I thank you for the opportunity that you have granted me to appear before you.

DR. LEWELLYS F. BARKER, Baltimore: It has been a great privilege to listen to this paper of Dr. White and his associates, to hear Dr. Elliott and also to hear the discussion of Dr. Feder. I would like to say that if no other papers are heard at this meeting, these have been well worth the journey to Greensboro. It deals with one of the most important subjects affecting medicine today. Of course we have all felt the difficulties of dealing adequately with shock and toxemia, but this plasma therapy meets the situation better than anything that we have ever had before. We have used whole blood transfusions for a long time for shock and anemia. Blood transfusions are very valuable and we have all used them. There is still value in blood transfusions. The Red Cross is encouraging the making of blood banks to send to England and other parts of Europe. It seems to me these blood banks are likely to be replaced by plasma banks to the advantage of everybody because so often what is needed is the constituents of the plasma. Moreover, the typing of blood is a tedious process and may delay therapy. If we have plasma prepared in the careful way described here today we will have what we need in the treatment of these conditions.

Now as Dr. Feder has pointed out and as you gather from Dr. Elliott's paper, preparation of plasma is not every man's job. Very few of us are prepared to undertake the preparation of plasma. Very few of the small laboratories or even larger laboratories are prepared to undertake it. But I do think it should be prepared and should be stored, and it seems to me the example of the State of North Carolina in establishing a state plasma center ought to be followed by every state in the country. I hope it will be and I believe it is likely to be.

Dr. Elliott spoke of dried plasma and the difficulties of its manufacture and use. It is an expensive process. In Philadelphia I believe two apparatuses have been constructed, one smaller one and another now available or will be soon—a very large one—and it is likely that dried plasma soon can be obtained at a much lower price than now. I hope that that will be possible because I believe there is a future for dried plasma as well as for stored liquid plasma, for when you think of it, in the army camps it might not be an easy matter to carry sufficient liquid plasma to meet emergencies, whereas dried plasma could be easily transported and be ready for use in a moment. I think the United States Army and Navy might consider seriously the advisability of favoring the preparation of dried plasma so that it may be available for our forces if they should be drawn into this iniquitous war.

DR. CHARLES S. WHITE: Dr. Northington's reference to the first transfusion of the Pope in 1492 always was a mystery to me. The old Pontiff died although they used three young men. Circulation of the blood was not discovered until 100 years later.

I think wherever plasma is used Dr. Elliott's name certainly should go with it. He is not only the father, but probably the mother, too, of transfusion. He is the whole family. He knows more about plasma than anybody in the United States and I believe North Carolina appreciates that. We are beginning to put emphasis on plasma at the Gallinger Hospital. We have been using the blood bank there and now the staff is getting around to using plasma.

The Present Status of Prostatic Surgery Analysis of Our Last Hundred Cases*

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Thompson-Daniel Clinic

ADVANCES in surgery of the prostate constitute the chief contribution of urology to the healing art in the past twenty years. Transurethral prostatic resection was introduced and its technic perfected, not by one man but by several men, each of whom contributed his large part. In my opinion Dr. Theodore M. Davis, through his work in Greenville and in Charlotte, made the largest single contribution. In this twenty-year period transurethral prostatic resection has largely replaced the older prostatic operations.

A good deal of this report is repetition. This must be the case in bringing up to date a report of continuing work.

In 1939 the *Urological & Cutaneous Review* sent a questionnaire to 55 hospital services listed in the American Medical Directory as having approved urologic residencies. The purpose of this questionnaire was to obtain an idea of the status of prostatic surgery throughout the United States in 1938. Twenty-six complete replies were received. In that year there were 1,410 transurethral prostatic resections done with 88 deaths within the two-week postoperative period—a mortality of approximately 6 per cent. There were 701 suprapubic prostatectomies (one- and two-stage operations) with 65 deaths—a mortality of 11 per cent; and 98 perineal prostatectomies with 4 deaths—a mortality rate of 4 per cent. In these 26 hospitals from which replies were received there were approximately twice as many transurethral prostatic resections as there were suprapubic prostatectomies and perineal prostatectomies combined. On many services the transurethral operation was done exclusively, while on one service only three patients had resections. On only three services were as many as 100 transurethral operations done in 1938. Dr. T. M. Davis, in the *Southern Medical Journal* for August, 1935, reported 748 patients operated on by prostatic resection with 6 deaths—a mortality of 0.8 of 1 per cent.

In 1938, Raymond Thompson reported to the Medical Society of the State of North Carolina and published in *Southern Medicine & Surgery's* June issue a series of 108 consecutive cases in which transurethral resection was done with two deaths—a mortality rate of less than 2 per cent.

Herman's *Practice of Urology*, published in

1938, says that in early cases transurethral operations have largely replaced non-operative procedures, that modern resectoscopes permit removal of large amounts of tissue and that there is no question of the relative safety and immediate effectiveness of resection, not only of minor lesions but also of certain enucleable tumors.

INCIDENCE OF CARCINOMA OF THE PROSTATE GLAND

A review of 794 cases by Drs. Harry C. Rolnich and Lester A. Riskind of Chicago, published in the *Journal of Urology*, January, 1937, studied clinically and pathologically, reported 600 as benign and 194 (24.3%) malignant. Of the 194 cases of carcinoma, 162 were diagnosed clinically. The 27 (13.9%) which were proven later to be carcinoma had been diagnosed clinically as benign hypertrophy. The high incidence of occult carcinoma of the prostate gland should cause us to investigate carefully any suspicious infiltration, induration or nodule. It should be needless to state that all tissue removed should be sent to the laboratory.

Following is an analysis of 100 consecutive operations on patients of the Thompson-Daniel Clinic:

Age	TRANSURETHRAL	PERINEAL	No. of Patients
	94	6	
50-55	6
55-60	7
60-65	22
65-70	23
70-75	26
75-80	8
80-85	7
91	1
Total	100

PRE-OPERATIVE TREATMENT

The number of cases in which it was necessary to have bladder drainage was 58; there was complete retention of urine in 49 cases. In cases of complete retention or a large amount of residual urine, we instituted bladder drainage by Keyes' decompression catheter method. In 42 cases residual urine was less than 10 ounces, and in these bladder drainage was not necessary. The well established plan of preliminary treatment should be continued until the renal function has become stabilized as determined by renal function and blood chemistry tests. Every effort should be made to have the patient in as good physical condition as possible before operation.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

POSTOPERATIVE CARE

The most important measure is thorough drainage of the bladder through a catheter. Hemostatic bags serve an important purpose in controlling bleeding; however, we do not employ them routinely. The bladder should be irrigated at frequent intervals if necessary to remove small blood clots or to insure constant drainage.

POSTOPERATIVE COMPLICATIONS

Hemorrhage: In this series we had only five instances of severe bleeding—two on the second day, two on the eighth and ninth days, and the fifth three weeks after operation. In all cases bleeding was controlled by insertion of a catheter and removal of blood clots from the bladder.

Epididymitis: Developed postoperatively in seven cases. The intervals between operation and epididymitis were: in two cases, five days; in three cases, eight days; in one case, ten days; in one case, three weeks. In no case was epididymitis so severe that it did not clear up within ten days to two weeks under ordinary treatment.

Vasectomy was not performed in any case in this series.

Diverticulum: One case with a large stone in diverticulum. A suprapubic incision was made for removal of the stone, while the prostatic obstruction was removed by transurethral resection.

Vesical Calculi: One case, large stone in a diverticulum; three cases, small stones in the bladder; one case, one large stone in bladder and suprapubic cystotomy, later prostatic resection.

Prostatic Calculi: Four cases. In three of these cases the stones were removed by resection and, in one by perineal prostatectomy.

Reoperation: In this series only one patient with benign hypertrophy required a second operation. This was done two weeks after first resection. However, three patients with carcinoma of the prostate gland had had resection twelve to eighteen months previously.

Incidence of Malignancy: There were sixteen cases of carcinoma of the prostate gland, 16 per cent.

TIME IN HOSPITAL

Many patients could leave the hospital in a week or ten days, but as the 8th or 10th day is the time when bleeding is most likely to occur, we advise all patients to remain in the hospital for two weeks. Many patients promise to be quiet at home, but usually do not. Rarely is it necessary to remain in the hospital more than two weeks.

MORTALITY

In this series we had three deaths. The first was a patient aged 74, who had complete retention of urine for which bladder drainage was continued for seven days after which twelve grams

of prostatic tissue was removed. Blood pressure, renal function tests and chemical constituents of the blood were within normal limits. Death came 30 hours after operation from a cardiac accident. The second was a 66-year-old man with moderate hypertension, renal function and blood tests normal. Two weeks after operation the patient had a cerebral hemorrhage and died seven days later. The third was a patient, aged 70, with carcinoma of the prostate gland, who had had urethral resection eighteen months previously. His general condition was fairly good, non-protein nitrogen retention moderate, renal function poor. He developed bronchial pneumonia and died nine days after operation.

CONCLUSIONS

1. We are impressed with the high mortality reported in prostatic surgery.

2. Careful pre- and postoperative attention is a large factor in yielding a low mortality. The use of small urethral catheters is advised.

3. We are operating in a much larger number of cases without preliminary bladder drainage now than in the past. In cases which need preoperative bladder drainage the simple decompression method by catheter drainage first suggested by Dr. Keyes of New York is much preferable to cystotomy.

4. In all cases of carcinoma of the prostate gland transurethral resection is the operation of choice.

5. Some very large adenomatous prostates should be removed by open operation.

6. Thorough resection of the obstructing prostatic tissue should be done. In 40 to 50 per cent of the cases 20 to 25 grams of tissue should be removed.

7. All patients who have prostatic surgery should be examined later and treated for any residual infection.

8. Transurethral resection of the prostate gland has been the greatest factor in lowering the mortality in prostatic surgery and is the operation of choice in the great majority of cases.

Discussion

DR. D. S. DANIELS, Richmond: It is mighty early to get up this time of morning, but I was awarded by this delightful paper. My experience in transurethral resections is rather limited. I am of the older school but I am fast being converted. I feel that the greatest of landmarks or milestones has been reached in prostatic surgery—that is, transurethral resections. I feel like Dr. Thompson that the great majority of these prostates should be treated by transurethral resection. Some clinics, as you know, are doing virtually one hundred per cent transurethral. From this series a man should no longer fear approaching old age and prostatism.

I enjoyed the paper very much.

DR. THOMPSON, closing: Dr. Daniels' comments are very encouraging. We will go forward in this work with added confidence.

Hand Injuries*

JAMES W. DAVIS, M.D., F.A.C.S., Statesville

MORE THAN one-third of all industrial accidents in North Carolina during the past year were hand injuries. That hand injuries is an extremely important subject is evidenced by the fact that the total cost to insurance companies for medical care, compensation and other expenses due to hand injuries last year was almost half a million dollars. This, however, does not tell all the story. It does not tell of the men who have had serious injuries of the hands, many of whom have suffered irreparable injuries, and some of whom have had to change their occupation on account of these injuries. Out of this group, only eight lost the entire hand, but 372 lost part—either all or some of the fingers—and 381 lost use of a hand. The total number of all compensation cases recorded by the Industrial Commission was 48,230. This gives the hand injuries 37 per cent of the total number of all cases—more than one-third of all compensation cases. The total number of days lost because of hand injuries was 92,285, which amounts to the equivalent of a little more than 250 years of one man's time.

These figures are not guesses. They are exact statistics from the files of the North Carolina Industrial Commission, records of accidents which have occurred here in the various industries in North Carolina during the past year, and deserve the thoughtful consideration of every doctor who handles industrial or any kind of accident cases.

The first twenty-four hours of treatment governs, to a great extent, the outcome of any hand injury. I might even go further and say that the treatment given to hand injuries during the first sixty minutes, or the first hour, governs the outcome to a great extent.

I wish to say here, though, that the treatment given hand injuries in North Carolina has been exceptionally fine, because, out of all the hand injuries which occurred, there were 2,388 which resulted in temporary disability and, of these, only 28.8 per cent became infected. Of the 739 resulting in permanent disability, only 37, or 4.7 per cent, became infected. Seventeen per cent of all injuries to the hand were infected injuries. This certainly does show up well for the doctors and hospitals in North Carolina.

In discussing this subject, we will detail the treatment of a typical, severe hand injury, consisting of a contused, lacerated and incised wound, involving the superficial and deep tissues, with possible injury to the basic structures and further complicated by soiling with dirt and other infec-

tious material, as often occurs at time of these injuries.

It is extremely important that the proper treatment be begun immediately.

As soon as the patient is seen, careful inspection of the hand should be made and then a general plan of treatment should be formulated, to be changed from time to time as the indications may require.

X-ray examinations should be made if there has been any possible injury to bone. Also a color photograph of the hand, or two or three color photographs, should be made if color photographic equipment be available. This measure is becoming more and more important each year, as such photographs constitute important medicolegal evidence.

We usually have a patient who is suffering intense pain, and this should be relieved by a hypodermic, if the patient has no idiosyncrasy to the use of pantopon or dilaudid. Where it is safe to do so, we find it advisable to block the nerves at site of injury by injections of procaine. This gives immediate relief from the intense pain and enables us to make a more thorough and more careful examination of the hand, and to test out the muscle and tendon action of each of the fingers and the hand generally.

While the hand is thoroughly anesthetized, a complete debridement and cleansing of the soiled tissues can be done without causing the patient any pain.

Where the hand is badly contaminated with dirt or glass or other material, it is well to pack the deeper tissues with gauze, washing with sterile mineral oil, so as to prevent entrance of dirt into the deeper tissues as the skin of the hand and the tissues surrounding the injury are being cleansed.

With brush and tincture of green soap and running water is usually an effective method of removing the dirt and other infectious material from the hand, although we find plain gasoline to be very effective. After the hand is carefully cleansed, it is dried and the paraffin gauze removed from the deeper tissues. The deeper tissues are then painted carefully with a 3 per cent solution of tincture of iodine, which gives a maximum of germicidal action with a minimum of injury to the tissues. Some use a colloidal iodine, which is all right.

While the hand is still anesthetized and the patient is suffering no pain, it is placed upon a sterile

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

cloth, and here the surgeon should change to another pair of sterile gloves and again inspect the hand very carefully. It is important that a good light be available so that the inspection can be thoroughly accurate; otherwise, it might be possible to overlook certain foreign bodies in the deep spaces, especially glass.

It is advisable to have a bloodless field in which to work, and, for this reason, we can apply a blood-pressure cuff, after elevating the hand for a minute or so, and then pump this up to 200 mms. of mercury to stop bleeding. It will be all right to leave this cuff on for twenty minutes, which is usually more time than is necessary for the final cleansing and debridement and any local treatment that is advisable at that time.

Whenever possible, injuries to the nerves should be repaired at once. Tendon repair is, in itself, an important matter, and too lengthy to be taken up in detail at this time, except to state that in some cases immediate repair of the tendons is possible and in others this must be deferred for some time.

For example, in some cases where the flexor sublimis only is cut, it may be advisable to remove both ends of the severed tendon and suture the proximal end of the sublimis in the palm to the profundus tendon. It is necessary, however, to get the tendons repaired or replaced at some time so that good motion of the fingers may be obtained.

The vast majority of hand injuries should be hospitalized at once, following the first treatment of cleansing, debridement and primary repairs. I might add that I feel that all hand injuries, especially where there is to be nerve- and tendon-suturing, should be done in a well-organized operating room, under every possible aseptic precaution. The hand should be put up in position of semiflexion, and not on a splint with the fingers extended, as this may result in stiffness.

When the first treatment is completed, we find it advisable to expose the hand sometimes to ultraviolet light, or to x-rays, or to both. Eighty to 100 r is usually sufficient for the first treatment. X-ray-treatment is an aid to the prevention of development of gas-bacillus infection. Combined tetanus and gas gangrene antitoxin should be given in these cases. The hand should be put up with a light dressing, using a light tent, which is also important in preventing development of infection.

The most destructive infection in hand injuries is that by the streptococcus, which causes sloughing of the tendons, lymphangitis, prolonged disability, septicemia and even death. We believe that sulfanilamide, or one of its derivatives, given internally would be of great help. In some in-

stances, sulfathiazole powder applied in the wound might be of help, but I feel that the best and most effective aid is given when these drugs are taken internally. If the patient is not able to take medicine by mouth, neoprontozol may be given intramuscularly.

Frequent inspection of the hand should be made for the first day or so, and any complications that develop may be taken care of promptly.

To attempt to discuss at length the various details of treatment of hand injuries is not within the scope of this paper, as these things are taken up from time to time as the surgeon, in his judgment, may find necessary.

CONCLUSIONS

There are a great many things that can be done for hand injuries, even the most severe injuries that seem hopeless at first. But the first hour, or few hours, of treatment is what counts most in the end and governs, to a large extent, the outcome. Massage, baking, passive and active motion, and inductotherm treatment are all useful and should be used when advisable.

It should be kept in mind that restoration of anatomical and physiological function is the main consideration in the treatment of hand injuries and, in order to get the maximum of improvement and the minimum of disability, treatment must sometimes be kept up over a long period of time. Weeks, or even months, of treatment may be necessary, until the point is reached where no further improvement can be obtained. Only then should we discharge the patient from treatment.

Patient, persistent and well directed treatment will often give results far beyond our expectation and much better than even the patient hoped for.

Color photographs, made along from the first to the last treatment, are invaluable as records and are very convincing to lawyers and jurors.

A careful, written record, with diagnosis and details of treatment of hand injuries, should be made at time of injury and added to from time to time as the progress of the patient requires.

First-aid treatment should be restricted to a minimum of interference on the part of lay first-aiders.

Claim men should be impressed with the economic, as well as the humanitarian, objectives gained by painstaking treatment of hand injuries. They should never underestimate the importance of hand injuries.

DR. DAVIS: I have some pictures of these hands.

DR. L. A. CROWELL, Lincolnton: I would like to see those pictures and I am sure some of the other men would.

DR. E. R. HIPP, Charlotte: It might be well to leave off the discussion and have the pictures instead of discussion.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

HEROISM

DR. RICHARD MAURICE BUCKE

of

CANADA

1837—1902

IN THIS COLUMN a month ago I talked of the American Psychiatric Association. The ninety-seventh annual meeting of that organization has just been concluded in Richmond under the presidency of Dr. George H. Stevenson, of Canada. A copy of the address of Dr. Stevenson before the Section of Historical Medicine of the Canadian Medical Association in its seventy-first annual meeting in Toronto, June, 1940, has lately come into my hands. In it I am enabled to renew my acquaintance with two of the mighty contributions of this continent to medicine and to mankind—Dr. Richard Maurice Bucke and Dr. William Osler.

My good and unique and large-hearted friend, Dr. John Sasser McKee, of Raleigh, a veteran of that other World War, once told me of the numerous reprimands he received during his war-time days because he habitually addressed his fellow-physician in the Service as Doctor rather than by military titles. Someone else told me that Dr. McKee was finally let alone, after he had replied to his corrective superior officer with the emphatic expression of his opinion that Doctor was the highest title he could think of and that he had no notion of addressing a doctor otherwise than as Doctor, even if he were to be put in the guard-house and kept there till doomsday! Dr. William Osler has been and will be Dr. Osler to me. I saw Dr. Osler only two or three times, and I met him only once.

Dr. Richard Maurice Bucke I know only through the medium of the printed page. The reprint of the address of Dr. Stevenson affords a study in contrast of those two distinguished physicians: Bucke and Osler: A Personality Study, by Dr. George H. Stevenson, Superintendent of the Ontario Hospital, London, Ontario, Canada. Here, we would call Dr. Stevenson's Hospital a state hospital for the insane. Of that Hospital Dr. Bucke was Superintendent from 1877 until his death in 1902.

Dr. Osler understood and properly practiced the graceful art of self-revelment, and, by his numerous autobiographies, and especially through the *Life of Osler* by Dr. Harvey Cushing, the great diagnostician is probably more widely known than

any other physician who has lived in the United States. Because of that fact, I shall speak only incidentally of Dr. Osler. I am interested in our knowing more about Dr. Bucke. In uniqueness of personality, in character, in courage, in intellect, in achievement he is one of the most remarkable men of all time. I wish that every physician who admires those qualities would request a copy of the reprint of Dr. Stevenson. In these troubled times we need to read of courage. That high attribute, more than any other, relates man closely to divinity.

In 1838 the Reverend Horatio Walpole Bucke, a clergyman of the Church of England, gave up his comfortable charge at Methwold, in England, and came with his family to Canada. He established a pioneer home. He did not continue in the ministry, but he engaged in farming. He brought with him his wife, his children, one of them the one-year-old Richard, the subject of this sketch. And the minister brought with him, too, several thousand books; for he was a scholarly man, and he was able to read and to speak at least seven languages. What a radical change in environment and in activities for a man so learned! One wonders what changes took place in his emotions, in his thoughts, in his purposes that preceded his immigration into the wilderness.

Little Richard Maurice Bucke, though the son of a scholarly, bookish Anglican clergyman, did not during his boyhood go to school at all. He worked on the farm. But he learned to read and in his father's large library he read voraciously—in history, in science, in religion, in philosophy. The little frontier boy's mother, about whom we seem to know little, died when he was seven. Soon his father married again. When the boy was sixteen his stepmother died. Then he left home. There is no evidence that he ran away or that his father disapproved of his going.

Young Richard Bucke, a boy of sixteen, who had never attended any school, came from Canada down into our United States. He was not grown, he was without special training, he could do only manual labor, such as he had done on his father's farm. He reached the valley of the Ohio and later of the Mississippi, and he did hard work with his hands—on the farm, on railroads and on steamboats, as deck hand and as fireman; and in the swamps of Louisiana he rived shingles out of the cypress trees. He became the member of a caravan that travelled by covered wagons to Salt Lake City. Soon he found a fellow-adventurer with whom he prospected in the Sierras. A blizzard and associated starvation killed his companion. Bucke himself was almost dead when finally found, and his frozen

feet had to be amputated, well above the ankles, probably in a mining camp. After months of convalescence, the twenty-year-old, footless, wholly unschooled boy returned to his father's home. His geographic Odyssey had been finished. His adolescent adventures had deprived him of his feet and almost of his life.

He came back to his father's home and at McGill University he entered upon the study of medicine. In 1862, at the age of 25, he was graduated. Though he had been without prescribed and formal schooling, his graduating thesis won the prize. The subject of it was: The Correlation of the Vital and Physical Forces.

He went abroad for a year's post-graduate study in medicine. He returned to his home in Canada, married, and for four or five years he attended to a general practice. Inasmuch as there are no clinical references to his footlessness I do not know to what degree, if indeed, at all, he felt handicapped by his physical deprivation.

The superintendency of an insane asylum in the distant eighties was wholly unrelated to a sinecure. Such a superintendent may have even as little leisure today. But during the years of Dr. Bucke's superintendency there were few, if any, trained nurses, an inadequate number of assistant physicians, and today's mechanical aids in diagnosis were almost wholly lacking. Dr. Bucke busily engaged himself in improving the medical study of his patients and in humanizing the care of them. He liberated them from mechanical restraints, and he provided as many of them as possible with congenial employment. His tireless energy and his resourceful mind lent themselves to unceasing efforts to transform a custodial institution into a modern hospital. In consequence of his labours he became one of the pioneer psychiatrists of this continent and one of the great physicians of his day.

Dr. Bucke's career is illustrative of the truth that the great man is always larger than his professional self. The Royal Society of Canada made him a member; the British Medical Association made him president of its psychological section; and he was elected president of the American Psychiatric Association under its former name—the American Medico-Psychological Association. But Dr. Bucke's increase in stature was never added to by his occupancy of high position. His greatness was due to his own cultivation of his own innate qualities. In spite of the multiplicity of his duties as Superintendent he gave a course in nervous and mental diseases in a medical college; he contributed to psychiatric literature, and he did much medical work. In the early days of his superintend-

ency he brought forth a book: *Man's Moral Nature*; later he published a study of Walt Whitman, while that poet was still alive; and shortly before his death his philosophy of life was expressed in a volume, the preparation of which must have involved voracious reading of infinite scope and depth: *Cosmic Consciousness*.

Always a student, always deeply religious, always an individualist, Dr. Bucke experienced throughout his earlier years discomfort resulting from religious conflicts. He told of the final dissolution of those doubts. He and two friends spent an evening in reading Wordsworth, Shelley, Keats, Browning and, especially, Walt Whitman. In driving home in a cab, still under the influence of the evening's associations, he found himself wrapped 'round, as it were, by a flame-colored cloud, and he became almost ecstatically happy. Within those few seconds he claimed that he learned more than in all his previous life, and he had a foretaste of Heaven that dominated the remainder of his days. He became a devoted disciple of Whitman, and he asserted that Whitman was the greatest religious prophet the world had ever known. His idolization of Whitman was sometimes too much for his more orthodox and conformist friends. In his *Life of Osler* the story is told by Cushing of an evening at the Rittenhouse Club in which Osler brought together Dr. Bucke and Dr. Chapin and Dr. Tyson and Dr. J. K. Mitchell and others. Dr. Bucke was already old, and the group must have marveled at the completeness of his acceptance of the religious philosophy of the erratic and unkempt-looking and wholly nonconforming old poet across the river in Camden. It is unlikely that Walt Whitman was ever a guest of the Rittenhouse Club or of the University Club, or in the homes of any of the University's professors. Educationally and medically and philosophically and religiously, if not always politically, Philadelphia is a proper city. Walt Whitman did not belong within it, nor did Dr. Richard Maurice Bucke.

Dr. Stevenson's reprint publishes for the first time five or six Osler letters—or notes—all written to Dr. Bucke. Osler and Bucke was each the son of a minister who came from England into frontier Canada. Each must have been largely the product of heredity—Bucke of his father and Osler of his mother. But Osler's conformity began early in his life and he soon became the cultured man of the world. Bucke's mind was innately perhaps the more profound, but he was a mystic and his subjective self was always to him the most interesting phenomenon in life. Bucke and Osler was each shaken and probably slowly killed by the tragic death of

a son—Dr. Bucke's by accident, young Osler on the field of battle. Dr. Osler, twelve years younger than Dr. Bucke, lived after him until 1919.

Dr. Bucke had none of the usual boyhood schooling. He probably did not attend school until he entered McGill to study medicine. But he was a scholar, even as a boy. Reckless adventure took both his feet from him in boyhood. He had to wear artificial feet. In that physical condition he began the study of medicine. Many a boy, perhaps most boys, would have become invalids as cripples, and would have remained recipients of care. The loss of his feet apparently brought young Bucke to his feet, and fixed him on his course. His whole life constitutes a magnificent example of unceasing courage, of high devotion to his better parts, and of broad and deep love of mankind. All of us who must live with ourselves and who must often deal with other intolerables in our professional ministrations should make a study of the life of Dr. Bucke. His character and his career exhibit man at man's highest level.

In the midst of this writing, on a lovely spring-time Sunday afternoon, I put down my pencil to listen by radio to the British Prime Minister, Winston Churchill. Bucke and Churchill! What mighty figures English blood sometimes produces!

GENERAL PRACTICE

WALTER J. LACEY, M.D. *Editor*, Fallston, N. C.

HEMORRHAGE FOLLOWING TONSILLECTOMY

Nor so many tonsils are being removed as was the case a few years back. A larger fraction of this reduced total is being done by general practitioners. Lives have been lost from this operation at the hands of specialist and at the hands of generalist, most of these from bleeding.

An article on this subject by one who knows,¹ and knows how to impart what he knows, is here given in brief:—

Dangerous hemorrhage following tonsillectomy is uncommon in children, frequent in adults. The gravest danger in these cases arises from inexperience and procrastination. The patient may bleed almost to death with very little bright-red blood showing, but with a dilated stomach full of clots. The bleeding and clotting time should be determined beforehand in all cases.

Tonsils must not be removed while there is any infection or sore throat. High blood pressure is a contraindication.

Do not allow a patient to leave the table with the throat still bleeding. Fibrogen should always

be given as an initial measure. In my own experience it has seemed that thromboplastin did no good at all. Ice collars and cracked ice may relieve. Gargling with 5 per cent tannic acid solution sometimes works.

If we take the same syringe that is used for local anesthetic operations, and inject 1 per cent novocain, with 1:40,000 adrenalin, in the same amount and by the same method used preliminary to operation, in 60 per cent of cases the bleeding will stop; it may recur in an hour. If it was almost stopped, but there was still a little bright-red blood in the saliva, the bleeding will certainly recur.

Injection should always be tried in a conscious and coöperative patient; though it fail as a complete cure, it will relieve the anesthetist of the difficulty caused by the blood in the patient's throat.

Suture of the pillars is the treatment for bleeding in amount. Do not stand by, losing time with ice chips and fibrogen; get the patient to sleep and stop the bleeding. Sponge pressure alone would probably get the situation under control, but suture is better. An artist might be able to suture the pillars under a local anesthetic. It is better to have him asleep. Long-handled instruments are absolutely requisite, and half-curved, round-point needles of several sizes, No. 1 plain catgut; special pillar-suturing needles are unnecessary.

Anesthesia must be deep enough to relax the jaw. As the patient first goes to sleep, the anesthetist must beware of the sudden vomiting of a quantity of blood. With the patient relaxed, the jaw is opened wide with the mouth gag; the tongue is depressed; and any blood clots are removed from the fossa. Then apply sponge pressure until the bleeding is checked.

Grasp the posterior pillar with an Allis forceps and draw it up against the anterior pillar. With a second Allis, clamp both pillars together, and release the forceps first applied. The pillars are now in good position for sewing.

Suture with interrupted stitches, entering the needle from below and seizing the point with a Munson cystic-duct forceps, or some similar long-handled instrument. Knots should be tied square, with three throws. The stitches should be about a quarter inch apart. The throat should be dry before the mouth gag is released. An intravenous infusion of 1,000 c.c. of 5 per cent dextrose in physiologic saline solution is advisable. Watch for recurrence of the bleeding about the third day.

FECAL IMPACTION.—Think of it and examine for it before opening the belly under the silly diagnosis of "acute abdomen."

1. P. W. Bailey, Fort Wayne, Ind., in *Clin. Med.*, April.

THE CAUSE OF STAMMERING

The theory that stammering results from a faulty action of the larynx in producing voice, may be of real importance, but it has never been completely worked out.

A writer in the *Illinois Medical Journal's* last issue shows the incompetence of those recent theories that find the explanation of stammering in psychologic abnormality.

Evidence is presented indicating the psychologic normality of a very large proportion of stammerers, and this evidence strongly opposes the conception that the universal explanation of stammering lies in "neuroticism," or "disorders of personality."

The author's belief is that the impediment is caused by a specific psychophysiologic disordered action of the larynx in producing voice, that the attitudes of the stammerer are caused by the embarrassment brought about in large part through the constant and serious uncertainty of his ability to talk normally.

A new method of treatment based upon this new conception has been attended with no failure to bring about complete and permanent eradication of the disorder at ages 9 to 12 in the six-year period in which it has been used.

1. E. L. Kenyon, Chicago, in *Ill. Med. J.*, April.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

INTESTINAL TUBERCULOSIS

INTESTINAL complications of pulmonary tuberculosis oftentimes receives too little attention. It has been claimed that a large proportion of active tuberculous cases at some time in their course have some degree of intestinal involvement which, in most instances, heals without ever having been recognized. There are two types: the primary or hypertrophic, and the secondary or ulcerative. The latter is the more common form, and the more important. There is still considerable argument as to whether intestinal tuberculosis is enterogenous or hematogenous, the majority agreeing that the avenue of infection in most cases is the alimentary tract, and that the swallowing of tubercle bacilli laden sputum over a fairly long period of time is the activating cause. Healing is rarely possible until the sputum becomes negative.

In the April issue of *Diseases of the Chest*, W. R. Hewitt has a discussion of this subject, and the following is a synopsis of his observations on the pathology, symptoms and treatment of the

condition. Owing to the fact, he states, that tuberculosis has an affinity for lymphoid tissue, the earliest site of infection is in the ileocecal region since lymphoid tissue is present more abundantly in that region. Any other part of the gastrointestinal tract may be involved, including the stomach, but when such involvement is found the condition is likely to be extensive. Newest infections are found in the Peyer's patches, which later go on to ulceration. Ulceration is slow, which gives adhesions time to form, a process which as a rule prevents perforation. There is caseation, endothelial and lymphocytic cell infiltration and giant-cell formation, with narrowing of the lumens of the arteries often to obliteration—which may explain the infrequent occurrence of hemorrhage. The mesenteric lymph nodes are always involved. Healing and breaking down occur simultaneously in the bowel, scar-tissue is formed and narrows the lumen of the bowel. Bands of adhesions from perforating lesions add to the obstruction. Peritonitis is common in late disease, and fistulas frequently follow surgical procedures.

In regard to the symptomatology of intestinal tuberculosis, the author states that it is impossible to single out any one diagnostic train of symptoms follow each other in great variety. Pain is inconstant and is not proportionate to the degree of involvement in the bowel. It is usually present in the lower-right or mid-abdomen, and may be severe and cramplike, although it is usually dull and aching. Palpation over the area frequently elicits pain when it is not otherwise present. Pain involvement is very suggestive of intestinal disease.

Diarrhea has previously been supposed to be an important symptom of this disease, but the author says that it is found present in only 30 per cent of the cases, and that it is no more a symptom of ulceration than constipation is of absence of ulceration. An occasional loose stool, or recurrent attacks of diarrhea are signs of disease, but food allergies and functional disorders must be ruled out. Ulceration is usually extensive when the diarrhea is present continually. Massive hemorrhage in this condition is rarely seen.

In discussing other symptoms, it is noted that an irregular temperature is characteristic of the disease, while uncomplicated pulmonary tuberculosis has a rather regular temperature curve. With intestinal tuberculosis as a complication the early morning subnormal temperature may remain through the forenoon, or there may be no fever for several days when a sudden rise may occur. Frequent intestinal upsets with a rise of temperature are suspicious indications, but the temperature curve may remain normal. Loss of appetite and

consequent lowered food intake causes loss of weight, not only because of lowered food intake, but also because of lessened absorption. Other symptoms are gaseous eructation, distention after eating, nausea, vomiting and constipation, either occasional or more or less continuous.

In making the diagnosis laboratory methods with the exception of x-ray examination, are of practically no value. The x-rays must be relied on to a large extent, and this examination should be made much oftener in cases with sputum positive for tubercle bacilli over a period of months. Diagnosis by x-rays depends on filling defects, changes in the motility of the bowel and spasticity. X-ray films should be made from the 6th or 7th hour through the 9th hour, and a 24-hour film should also be made. The colon enema is not always necessary for the diagnosis. Dilatation and segmentation are considered evidence of small intestinal involvement. From the 5th to the 9th hour after giving barium by mouth it should be passing through the ileocecal area into the right colon, and at this time fluoroscopic examination is of aid in locating fixation, thickening and tenderness. The writer also favors a film made after expulsion of the barium. Filling defects are caused by either scarring or spasm at the site of the mucosal injury. Stasis in the ileum with little or no barium remaining in the terminal ileum after 9 hours also indicates disease in the same area. The cecum should remain well filled from the 6th through the 10th to 12th hours, and if barium remains in the ileum, while the ascending colon is well-filled and the cecum is poorly filled, the indications are that disease is present in the cecum.

The author considers prophylactic treatment as the first line of defense in intestinal tuberculosis, *i. e.*, well planned active treatment in order to render the sputum negative for tubercle bacilli as quickly as possible. The various modern methods of chest surgery are recommended as effectual in achieving this result.

Maintenance of good digestive ability and, hence, the best possible state of nutrition is necessary, remembering that a high state of nutrition is not necessarily synonymous with a rapid gain in weight. Proper nutrition is produced by supplying all food elements, vitamins and minerals, and causing them to be properly and fully absorbed. The diet should be bland and with a minimum of residue, but a highly restricted diet should not be continued for any considerable length of time. When blood findings are below normal, iron in some form should be added. Powdered opium or the deodorized tincture should be used for pain or looseness of the stools. Constipation should be

handled in the simplest way, as laxatives should be avoided, and mineral oil should not be used for any considerable length of time.

The author considers artificial heliotherapy as essential in the treatment, and considers it preferable to sunshine as the dose can be accurately measured and does not harm the lung condition, as sunshine often does. The mercury vapor ultra-violet lamp is used over the whole body, except the chest and eyes, both of which should be covered. Exposure is begun with one-half minute daily over front and back with the burner at a 36 inch distance, the time to be increased by not over one-half minute a day. When the exposure reaches 30 minutes daily to back and front the lamp may be gradually lowered to 30 inches. The writer recommends that irradiation be continued in this way over a period of from one to two years. He concludes the article by saying that the prognosis in intestinal tuberculosis is very favorable provided the lung involvement can be satisfactorily controlled, and the local treatment of the condition itself carefully carried out.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

OTITIS HEMORRHAGICA

DURING and following the influenza epidemic I saw quite a few cases of otitis hemorrhagica. In most of these the hemorrhage was petechial from a generally engorged external canal, and accompanied by a similar engorgement of the mucous membrane of the nose and pharynx, and in some cases the conjunctiva also. The appearance of the auditory canal and drum was not unlike that frequently seen in measles. In four cases, all children, the canal was clear, the drum purplish red and shiny. On myringotomy a small to moderate amount of whole blood was released from pressure. In one case a definite fluid level was seen before opening. In no case was there involvement of the inner ear. Cultures from these ears showed no growth in some, hemolyzing and non-hemolyzing staphylococcus aureus in others, non-hemolyzing streptococcus (strep. viridans) in still others, and only one Beta hemolyzing streptococcus. Irrigation and drops were used as indicated and sulfathiazole according to body weight were given, except in the Beta streptococcus case where neosulfonyl was used. Recovery was uneventful and prompt in all cases.

It is noteworthy that in some cases there was no bacterial growth, using the same technique and the same culture medium in all cases; also that, of those cases cultured only about one in fifteen

showed Beta streptococcus, emphasizing the futility of giving sulfanilamide to all comers with otitis media (pharyngitis, bad colds, etc.) A number of the cases made immediate recovery after myringotomy without any chemotherapy. In those cases showing no bacterial growth, one is led to wonder if the virus of influenza is not responsible for the otitis media even without bacteria.

In the epidemic of 1918 all the cases which came to autopsy showed an invasion by bacteria; in other words, death was caused by these bacteria. Also, cases of pneumonia following measles which came to autopsy all showed a secondary invasion with bacteria.

From the recent epidemic of influenza, Stokes and Wolman¹ report a fatal case which came to necropsy. A blood culture taken before death demonstrated a pure culture of *Staphylococcus aureus*. The same bacterium was recovered from the trachea and lungs. During the last hour of the patient's life there was an increasing amount of hemorrhagic fluid choking her nose and throat, amounting terminally to over 1000 c.c. Two rapidly fatal cases of influenza, not yet reported, showed an overwhelming secondary infection with *Staphylococcus aureus*.

Influenza, common colds, and rheumatic fever seem to be due to a virus paving the way for a bacterium. Fatal cases of measles are not due to the virus of measles, but to the secondary bacterial invaders.

Hemorrhagic otitis media could be due to the *Staphylococcus* toxins which weaken the blood-vessel walls and produce the hemorrhagic tendency seen in many cases of influenza.

The treatment of these cases of influenza should be started early. Chemotherapy should not be used indiscriminately, but where it is to be used, sulfathiazole is the drug of choice until bacteriologic report is known, then if necessary sulfapyridine or sulfanilamide may be substituted.

1. Stokes, I. Jr., and Wolman, I. I. in *Internat. Clinics*, March, 1940.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.
Health Officer Pitt County.

IMMUNIZATION CERTIFICATION

It appears that many physicians are not familiar with the North Carolina law in the matter of certification of diphtheria immunization. For the information of such physicians and in the interest of parents and school principals, as well as the health officer, we here quote two sections of the diphtheria law:

"Section 4: A certificate giving the name and address of the parent, parents or guardian, the name and age of the child and the date of the administration of the prophylactic agent, shall be submitted by the physician rendering this professional service to the local Health Officer, and in instances where there is no Health Officer, said certificate shall be submitted to the County Physician. Such certificate shall be kept on file as a permanent record by the *local County Registrar for births. Furthermore, such certificate of immunization shall be presented to school authorities upon admission to any public, private or parochial school in North Carolina.

Section 5½: Provided this Act shall not apply to children whose parent or parents or guardians are bona fide members of a religious organization whose teachings are contrary to the practices herein required."

It appears to us that the certificate made out by the practicing physician should be made out in triplicate, one for the parent to be passed to the principal of the school, one to the registrar, and one to the Health Officer.

*We interpret the expression "local" to mean city or township registrar.

OPHTHALMOLOGY

HERBERT C. NEELETT, M.D., *Editor*, Charlotte, N. C.

HEADACHE NOT OF OCULAR ORIGIN

TWO IMPRESSIVE PROBLEMS are presented by the majority of patients who seek an eye examination. The one, the history of headache as a common symptom; the other, the belief that the eyes must be at fault, and that glasses will be a panacea for any and all types of headache.

It has been taught that the great majority of headaches are functional in origin and that the majority of these have an ocular basis. The former viewpoint is readily subscribed to, but the latter is not so acceptable. For years the writer has made a careful study of this problem in an effort to prove to his own satisfaction and that of the patient that headache, not of organic origin, oftener than not has its etiology elsewhere than in the eye.

Proof of this are the facts that many persons with defects of vision based upon high refractive errors of any type rarely, if ever, experience headache worthy of note and present themselves for examination because of defective sight; and that the majority of headache victims have neither visual deficiency, accommodative anomaly, muscle imbalance, ocular pathology, nor refractive error—or at most one of minor consequence and of a

simple type. To say that an optical lens relieves the majority of these patients is not based on fact. If perchance it does relieve the headache the relief is in psychic response to the wearing of the glasses. Cases of this type are frequently encountered, patients wearing a plus or minus 0.12 diopter sphere or cylinder who claim they are lost without these glasses and headache is more marked without them. Further proof in this particular is had by the fact that in the absence of an ocular problem patience, perseverance and a careful analysis by the oculist will prove to the patient that glasses are not indicated, that his headache will not be benefited by them and that the cause of the headaches is outside the sight organs. By so doing he may accomplish three things: he may dispel the belief prevalent among the laity that glasses are the panacea for headaches; he may temporarily lose the patient and glasses prescribed elsewhere be found by the patient to give no relief, and he will return poorer but wiser and grateful; or he may be able to convince the patient that the headaches are based upon incorrect habits of living or upon general physical factors, etc., and be the means of having the patient obtain relief by means directed against the real cause.

What are some of the other factors at fault which produce functional headaches not of ocular origin? Chronic fatigue, physical and nervous, from whatever cause—prevalent among all classes of people because of the speed at which we live—chronic constipation in 80 per cent of women and 25 per cent of men, a hurried breakfast of some fruit juice and a cup of coffee or coffee alone to begin the day's work and supplemented, beginning at 9 a. m., with some caffeine drink and continued throughout the day so that a proper and nourishing dietary is neither ingested nor desired, dietary fads for weight-reducing principally among women, habitual and excessive smoking by all classes which in many produces a baneful effect, allergic states producing congestion of the mucous membrane of the nose and accessory sinuses, lack of outdoor exercise and healthful diversion, too much competition in life for the child and adult possessed of a highly nervous mechanism. Add to these the regimentation of all classes of people in their economic, social, religious and domestic life, and a physical and mental status will result which will produce many functional problems of the body of which headache is not the least.

In summary—we, as oculists, are physicians, and we can best serve our patients and ourselves by a broader, more comprehensive application of our knowledge of the practice of medicine in each individual case, rather than lose our identity by

confining ourselves too technically to the eye as an organ apart from the rest of the human anatomy.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

THERE ARE TWO SIDES

IN A MEETING of a board of directors of a hospital the purchase of new equipment is frequently discussed. All kinds of questions are asked: who requisitioned the purchase? how long has it been since that department asked for a similar purchase? how much did that department spend last year for new equipment? what is the cost of the desired items? The most important questions are often left out. They are: Will the present equipment render trustworthy service if properly used by a careful and painstaking personnel? If it will not, can it be economically repaired so that it will render such service?

The other side of the question is supported by the head of the department requesting the equipment. This is usually the argument: A certain piece of equipment is so many years old. It is entirely out of date. To use it requires too much time and effort. Other departments in the hospital have had new equipment since they had anything. Their department would be up-to-date if it had this particular equipment. It is seldom that they will come out and make the point-blank statement that the present equipment is not capable of doing the work. Often they will admit that it is possible to repair the old equipment so that it will be satisfactory.

Now from the board of directors viewpoint it is hard to see from any other angle than that of black and red figures unless they happen to be physicians themselves. Unfortunately, this is not usually the case. The group appointed to run a hospital are most often selected for one of three reasons: First, because they are wealthy and thereby influential; second, because they are very popular; third, because they have succeeded in some kind of business. None of them is appointed because he knows the difference between a Bausch & Lomb and a Spencer Microscope, or a Kny-Scheerer operating room table and one of some cheaper type. The only way for these individuals to intelligently supervise the purchasing of new equipment is for them to consult someone who knows and who is capable of giving an unbiased opinion. Also, they should learn to ask intelligent questions. A direct and correct answer to an intelligent question will help a lot. The first and last question should be: Will this new equipment facilitate the recovery of our patients? In between,

however, they should ask how much the new equipment costs, how durable it is and if it is a time-saving device.

We shall all have to admit that propaganda is an effective method of persuasion. No one realizes this better than the commercial houses selling equipment. Their representatives are experts at propagandizing department heads. By the time a representative gets through with an interview the dietitian, the operating room supervisor, the laboratory technician—any department head—is convinced that his or her department is the scapegoat of the hospital family, and that he or she should be ashamed to admit being connected with an institution that will not replace such obsolete equipment.

Before the visit of the representative of the commercial house they had considered themselves getting along all right, but now they are very certain that their setup is beyond redemption unless drastic changes are made. Maybe one has recently visited a similar department in another hospital where new equipment has been installed. This has stimulated enthusiasm and covetousness. Vanity demands "the best," or "as good as others have" anyway. With that frame of mind they are prepared for the thought that it is not money out of their pocket and why should they have their pride trampled on in the interest of the financiers of some institution.

The heads of many of the departments in the hospitals nearly always refer to the hospital as "my hospital"; strangely they sometimes forget that relationship when they want something which costs time and labor or money. Also when some other institution offers them a position with a raise in salary or shorter hours.

So we can see that there are two sides to this as well as to other questions. Neither side should be dogmatic or inconsiderate of the other's position. The best solution is for the hospital directors to employ a business manager or superintendent who is intelligent, trained and fair-minded. Such an individual should know whether or not the equipment is obsolete, whether it is being properly used, whether the results are satisfactory, whether it is capable of being repaired; and if new equipment is necessary, when the proper price has been submitted. The one thing which is necessary for all parties to consider is that all hospitals are built, maintained and operated for the benefit of the sick man who is unable to work and therefore unable to earn a livelihood for himself and for his family. Those who make their livelihood out of such institutions will have to learn to live and enjoy the services they are rendering to mankind,

rather than the remuneration they are receiving for their labors.

INSURANCE MEDICINE

H. F. STARR, M.D., *Editor*, Greensboro, N. C.

IN establishing a Department of Insurance Medicine, *Southern Medicine & Surgery* has taken a forward step from which a large number of its readers will benefit.

The amount of insurance work done by physicians in the United States and the extent to which insurance fees contribute to the total income of physicians in this country is truly astounding. The Medical Examiners' Committee of the American Life Convention collected data and reported that Life Insurance Companies alone paid to physicians \$70,504,361.42 in medical fees in the year 1936 (the latest year in which the figures were compiled). This does not include the amount paid by self-carriers, state insurance plans, contract practice, group and industrial payments, automobile liability payments, nor fees paid as provided in accident policies. The committee estimated conservatively that these excluded groups paid an additional \$50,000,000 to physicians. The average practitioner receives practically one-fourth of his income from insurance work. So, for this reason alone, a department in this journal dealing with insurance medicine should meet a very definite need, particularly in view of the fact that there is little material on the subject available to practicing physicians. Almost every physician at some time or other engages in insurance work to a greater or less extent.

Insurance Medicine is a specialty and it has built up quite an extensive literature of its own which is almost entirely unknown to Clinical Medicine. Yet there is much information that insurance medicine has accumulated which should interest clinicians and can be utilized to a very decided advantage in clinical medicine. It will be the purpose of this Department to present from time to time various phases of insurance medicine which it is hoped will prove useful to the readers, in their clinical as well as their insurance work.

Eminent authorities in the field of insurance medicine will contribute articles to this Department frequently. We are happy to announce that next month there will appear an article by Dr. Harry W. Dingman, Medical Director and Vice-President of the Continental Life Insurance Company of Chicago, a recognized authority and author of *Insurability Prognosis & Selection, Selection of Risks* and numerous papers on various phases of insurance medicine.

Comments and criticisms from readers or suggestions as to topics for discussion will be gratefully received.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

THE GLUCOSE-INSULIN TREATMENT OF ADVANCED CIRRHOSIS

THAT something may be done for a patient in advanced cirrhosis of the liver, even to returning the individual practically to normal, is news indeed. This news¹ is passed on for wide use.

The liver with portal cirrhosis of the most advanced type is capable of a reversion to a functionally adequate liver. It is probable that alcohol plus the dietary deficiency factor "X" is responsible for most of the Laennec's cirrhosis that we see.

In the treatment the essential points are that 1) whisky and all other forms of alcohol be stopped, 2) the missing elements in the diet be supplied in excess, and 3) the secondary therapeutic measures be designed to be helpful rather than fatal.

Salysrgan, mercupurin and other diuretics do little if anything for the ascites; they may do harm by causing a serious dehydration in the extraportal circulatory system. The ascites requires paracentesis, repeated as often as necessary, provided one bears in mind what is happening physiologically as one continues to draw off fluid; unless these changes are compensated, repeated paracentesis can kill the patient.

Along with paracentesis, the customary low-fluid, low-protein and low-salt diet is like a drink of wormwood. How much water the patient is to have can best be judged by his thirst. Salt can be replaced with ease in the food, or in saline solution by vein. For replacement of the protein transfusions of blood serum or of whole blood are usually necessary.

After the ascites, the next concern is measures beneficial to the liver itself—liver extract parenterally to supply the blood-building factor and sodium zanthine, vitamin B₁ in excess along with the rest of the vitamin B complex. Brewer's yeast does good, not only because of the vitamin B complex it contains, but also because it contains a factor "X"; also a pancreatic extract, known as *linocaic* (active ingredient appears to be choline). Our most beneficial substance in treating liver disease in general is glucose. In advanced cirrhosis 400 to 600 c.c. of carbohydrate a day, either orally or intravenously, is essential.

On the regimen outlined, the patient with advanced cirrhosis will get along for an indefinite

period. If the liver damage is not too severe he may even cease to have ascites and return to a fair degree of activity.

In obstinate cases an additional measure has been found to "turn the trick." It was noted that considerable amounts of glucose came through in the urine. Thinking to obviate this waste of carbohydrate, insulin was given sufficient to render the urine sugar-free. In a patient who had been tapped 28 times in 30 weeks the ascites disappeared two weeks after starting insulin, the patient remaining otherwise on the original treatment. After two months, the insulin was withdrawn and in a fortnight paracentesis became necessary. Insulin was resumed and again withdrawn on three subsequent occasions so that the relation of the insulin to the disappearance of the ascites seemed established in one patient. Then the same procedure was repeated in two additional patients with far-advanced Laennec's cirrhosis with similar results. After insulin had been given for periods of nine, six, and six months, respectively, in the three cases, the liver had recovered so as to do its work without insulin. All three patients have returned to a fair degree of activity and have normal liver functions as measured by the hippuric acid synthesis and other tests.

When repeated paracentesis is necessary in Laennec's cirrhosis, a diet containing adequate fluid, protein and salt is essential; also transfusions, liver extract, thiamine chloride, Brewer's yeast, a carbohydrate intake of 400 to 600 gm. daily and insulin in amounts sufficient to prevent glycosuria.

1. J. A. Schindler, Monroe, Wis., in *Wisc. Med. J.*, Mar.

LESSONS FROM INFLUENZA EPIDEMIC

THE recent epidemic of influenza was very general and of a milder type than the 1918 pandemic; complications were as frequent, but mortality was much lessened.

Research has been constant for a vaccine or preventative. Quite recently it was noticed that ferrets during the course of their distemper could not be infected with influenza. Both distemper and influenza germs (virus?) are grown on incubated eggs. The work and experimentation with vaccines made in this manner have given encouraging results.

Chemotherapy is of inestimable value in influenzal complications. Before the advent of the sulfonamides pneumonia took a toll up to 40 per cent. Since their use has become general the mortality is virtually nil for respiratory diseases. No untoward reactions have been noted in the use of

this drug. The thiazole derivative has been most satisfactory and the cost is a third of that of the other derivatives. There has been no cyanosis, only slight nausea, and large doses could be administered for a shorter period of time. No urinary calculi have been noticed following its usage. No blood dyscrasias have exhibited themselves—Drs. Holmes and Martin have recovered from the bone-marrow alcohols which will prevent agranulocytosis.

Promin, one of the newer sulfone drugs, has been found efficacious in streptococcal infections, especially those of the upper respiratory tract and erysipelas.

"Grain for grain it was less toxic than sulfanilamide and was tolerated better than either sulfanilamide or sulfapyridine. It was injected slowly in amounts of 5 Gm. three times a day in all patients, regardless of age or weight. It did not cause destruction of red blood cells nor irritate the kidneys. There was no evidence of formation of crystalline deposits in the urinary tract. Orally the drug was erratically absorbed."¹

It might be thought that a combination of sero- and chemotherapy in the treatment of pneumonia would be most effective, but on account of the inaccessibility of laboratories and of sera, and the high cost of sera, this combination use is rarely practicable. However, the sulfones have a happy use in preventing and curing pneumonias, sinus infections and other complications of influenza.

PSEUDO SINUSITIS

(Eugene Orr, Nashville, in *Jl. Tenn. State Med. Assn.*, Mar.)

The term "sinus disease" is loosely used. It has supplanted the "catarrh" of yesteryear. The headache patient is too often the victim of a loosely-made diagnosis of sinus disease or eyestrain. It does not take any sort of special examination to find that many of these patients do not have sinus disease. Often a history together with a general examination will suffice.

To operate on the x-ray findings alone is to do unnecessary surgery. The antrum is diseased oftener than any other sinus and here, as a rule, it is comparatively easy to make an accurate diagnosis.

A review was made of 310 cases, all of them sure they had sinus disease. (Post-nasal discharge does not necessarily mean sinus disease.) We began with everybody who claimed to have sinus disease and sifted out 310 cases in which we suspected sinus disease; further sifted these 310 cases and have 158 cases of proved or suspected sinus disease; 152 had definite symptoms of sinus disease, but were not sinus cases in any respect. Chief causes: over-treatment, allergic and nutritional disturbances and endocrine dysfunction, and diagnosis from x-ray shadows alone. In prescribing nasal medication for an acute condition, instruct the individual to discontinue the medication after the acute symptoms have subsided, and to use boiled tap water instead of distilled water.

Allergy perhaps offers the most difficult problem in this whole group.

Endocrine dysfunction plays important role. In a few

cases thyroid extract produced results which were almost miraculous.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., Editor, Mannboro, Va.

MINOR DISCOMFORTS OF PREGNANCY¹

MINOR DISCOMFORTS are present in every pregnancy. Recognition of the existence of these discomforts and their correction will pay dividends.

Nausea and vomiting occur during the first trimester in 50 per cent of all pregnancies—usually in the morning but may be at any time. Some disturbance of carbohydrate metabolism is involved. Aggravating factors are worry, loss of sleep, fear of labor, or even the financial aspects. Constipation is common. Gossip is often responsible. The author's best success has been obtained with a high-carbohydrate diet, in small feedings, at 1- to 3-hour intervals. Fluid is not taken with solid food but an hour afterward. After-dinner mints provide the stimulating effect of peppermint plus the dextrose. Frequent feedings produce results by keeping food in the stomach. Constipation must be corrected. Apprehension should be relieved. Sedation is rarely necessary; then phenobarbital $\frac{1}{2}$ gr. Active focal infection should be removed. A craving for certain foods is not harmful unless these are coarse or spicy.

Heartburn is common during the latter months due to interference with peristalsis of the stomach and intestine. Fermentation takes place in retained food. Avoid acid drinks and rich or spiced foods. Alkali, such as calcium carbonate, is used as required.

Constipation is frequent and causes extra work for the kidneys. The diet should be high in roughage with adequate fluids. Pears, rhubarb, prunes and sauer-kraut are efficient laxatives. Agar-agar or psyllium should be used in the dry form. Mineral oil interferes with digestion and absorption of food. If a laxative is necessary, milk of magnesia alone or combined with a small amount of castor oil may be useful.

In the breast first a prickly, tingling sensation, then a feeling of fullness or tightness and later discomfort in the pectoral muscles due to weight occurs. A snugly-fitting and supporting brassiere transfers the weight to the shoulders. Cocoa butter applied to the abdominal wall, the breasts and thighs will not prevent the occurrence of striae. This massage, however, relieves the discomfort of stretching.

Urgency and frequency appear during the latter

¹ F. W. Davis, Columbus, in *Ohio State Medical Journal* via *Digest of Treatment*, January.

part of the first and last trimesters. Marked anteversion of the fundus in early pregnancy throws the cervix toward the hollow of the sacrum which in turn stretches the base of the bladder. Later on the large uterus usurps the space into which the bladder expands as it fills. Usually the complaint is most at night. Since we do not wish to cut down the fluid intake, fluids are restricted only during the 4 hours before retiring. In the last trimester an abdominal girdle may assist.

Vaginal discharge, usually dating from the end of the first month, is a frequent complaint. In the absence of a demonstrable specific organism, it results from the congestive changes in the pelvis. A daily sodium bicarbonate douche is immediately effective.

Hemorrhoids are more prevalent and painful during the last trimester especially in constipated patients. If correction of bowel function does not relieve them, astringent suppositories containing a local anesthetic are indicated. Cold witch hazel compresses may be applied with pressure over the anus immediately after a bowel movement. Sclerosing injections should be postponed until after delivery if possible.

Swelling of the feet is common in the latter weeks of pregnancy in the evening. In the absence of any pathology, the patient's mind is usually relieved by the mechanical explanation. If edema is marked, recumbency with elevation of the feet will be necessary during the day.

Pain. After sitting for a period of time, it may be difficult to arise and walk; walking may be painful for a short time. Pain is in the lower abdomen, over the symphysis pubis, over the sacro-iliac joints, the coccyx or hip. Cramping of the muscles of the feet or calves may arise due to venous stasis. Massage and heat are used for the immediate relief of cramps. Properly fitting, low-heeled shoes aid in maintaining body balance as the abdomen enlarges forward. A well-fitted girdle, snug over the pubic bones, a sort of half hammock effect, holds the tumor of pregnancy well in and up out of the brim of the pelvis. Very good results have been obtained in cases of pubic or low-back pain by pushing calcium and vitamin D orally. A few have not needed the girdle after 2 to 3 weeks.

PRACTICAL POINTS IN THE EYE, EAR.

NOSE AND THROAT FIELD¹

Eye: Acute iritis is rather common and must be differentiated from acute glaucoma. Proper diagnosis is essential, for atropine, indispensable in iritis, is contraindicated in glaucoma and its use may lead to blindness.

Insist on routine blood Wassermanns for all pregnant women. Proper treatment for maternal syphilis may prevent interstitial keratitis in the infant.

Prostatitis may cause lesions of the fundus.

EAR: In any acute infection in childhood don't forget the ears. Middle-ear infections are common, and early myringotomy with wide incision may save much distress.

NOSE: Do not lance or open a boil, pimple or furuncle about the nose or inside the nose.

In lesions of the nasal sinuses fungus infection should be recalled. Massive doses of iodides are therapeutically valuable here.

THROAT: Do not forget that tic douloureux (trigeminal neuralgia) may be caused by infected tonsils. Also bear in mind that a persistent cough may be caused by an extremely long uvula.

Any patient with hoarseness lingering longer than 3 weeks should have a thorough examination of the larynx. Cough or choking, otherwise unexplained, in small children, should arouse suspicion of a foreign body in the trachea or larynx.

Infected tonsils or adenoids, unless acutely inflamed, should be removed whether in child or adult. If acutely inflamed remove as soon as acute local symptoms and fever subside. Weight gain, mental improvement and cessation of postnasal discharge may result.

DENTISTRY

DOMESTIC WATER AND DENTAL CARIES

J. H. GUION, D.D.S., *Editor*, Charlotte, N. C.

RECENT STUDIES¹ have disclosed marked differences in the prevalence of dental caries in communities often in close proximity to one another. Considering the apparent similarity of the population groups and the methods followed in the selection of the samples, it is difficult to ascribe these differences to any cause other than the mineral composition of the common water supply. At the present time both epidemiological and experimental evidence points to fluoride as the factor partially inhibiting dental caries.

A study of eight suburban Chicago communities discloses marked differences in the amount of dental caries. The rates in Elmhurst, Maywood, Aurora and Joliet, whose public water supplies contain 1.8, 1.2, 1.2 and 1.3 parts per million of fluoride, respectively, were 252, 258, 281 and 323, respectively. At Evanston, Oak Park and Waukegan, using fluoride-free water, the dental caries experience rates were 673, 722 and 810, respectively.

¹ D. D. Stetten, *Mineralized Water as a Factor in Dental Caries*, *J. Dent. Res.*, January, 1941.

¹ H. T. Dean, *et al*, in *Pub. Health Reports*, April 11th.

Using the proximal surfaces of the four superior incisors as a basis of measurement, there was 14.3 times as much of this type of dental caries in the 1,009 children from Evanston, Oak Park and Waukegan as in the 1,421 children from Elmhurst, Maywood, Aurora and Joliet.

The differences in the counts of acidophilus bacillus in the saliva corresponded to the differences in the dental caries experience in the groups of communities studied.

Considering the relative sameness of these urban populations and the sampling method followed, it is difficult to ascribe these differences to any cause other than the common water supply.

The caries-inhibitory factor, presumably fluoride, was operative at such low concentration that mottled enamel as an esthetic problem was not encountered.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE TREATMENT OF ASCITES COMPLICATING CIRRHOSIS OF THE LIVER

ATROPHIC CIRRHOSIS of the liver is a fairly common condition resulting in progressive destruction of liver cells and their replacement by scar tissue. The disease is caused by the prolonged action of an unknown poison or toxin upon the liver cells. This may come from faulty metabolism or it may be of chemical or bacterial origin. Treatment should be preventive; for by the time symptoms become manifest, although the liver has considerable regenerative power, usually irreparable damage has been done.

In advanced cirrhosis ascites from obstruction to the portal circulation is of frequent and distressing symptom. For many years symptoms of pressure of the accumulating fluid upon the heart and the lungs have been relieved by removal of the excess fluid by paracentesis. Relief has been only temporary, however, and repeated tapings have been necessary for removal of the recurrent ascites. In some of these cases after many tapings at lengthening intervals the ascites has not returned.

This result is thought to be due to the relief of portal obstruction by the establishment of a collateral blood supply to the liver through the many omental adhesions caused by the trauma and the localized peritonitis of repeated paracentesis. The Talma-Morrison operation of omentopexy and visceropexy has been designed to bring about the same effect more quickly and more surely by laparotomy. Although perhaps based upon sound physiological principles, the results of the operation

have been disappointing in our very limited experience with it. Admittedly used only in advanced cases it has not prevented the recurrence of ascites nor has it appreciably prolonged life.

The chronic peritonitis of portal cirrhosis thickens the peritoneum and causes it to lose its power of absorbing ascitic fluid, and may actually aid in its elaboration. Hughson, in 1927, advocated as a possible form of treatment for cirrhosis the removal of large areas of parietal peritoneum. Otto has recently reported three cases of cirrhosis with ascites in which he has excised the parietal peritoneum of the entire anterior abdominal wall. The operation in each case was successful in relieving the ascites. Two of the three patients have returned to their normal activities. In no case has there been shock, secondary hemorrhage or postoperative intestinal obstruction. He thinks that obstruction does not develop because the overlying omentum becomes adherent to the abdominal wall. It protects the viscera by preventing their coming in contact with the denuded surface.

"Postoperative paracentesis has been necessary but two or three times in this brief series of cases. This has been performed at weekly intervals and collateral circulation has been found to be established in three weeks, and ascites has not recurred."

In conclusion, it may be said that it will take time and experience to evaluate the Otto operation. It can never hope to restore liver cells that have been replaced by scar tissue.

A CASE OF INSULIN ALLERGY SIMULATING CORONARY OCCLUSION

(H. F. Wechsler, *et al*, *New York, in J. Lub. & Clin Med.*, April)

The injection of 20 units, and later of 3 units, of Iletin (Lilly) in a 65-year-old arteriosclerotic hypertensive diabetic patient gave rise to a syndrome strongly simulating coronary occlusion. Reviewing the case from the viewpoint of a possible allergy, it is clear that we are dealing with the symptoms of anaphylactic shock. Skin tests corroborated this assumption.

SULFANILAMIDE has proved curative in most cases of pyelonephritis in which there was no obstruction to the urinary flow.

FOUR-WEEKS COURSES IN OBSTETRICS

The Illinois State Department of Public Health and the Children's Bureau, U. S. Department of Labor, are sponsoring ten 4-weeks courses in obstetrics at the Chicago Lying-in Hospital during the fiscal year 1941-1942. Only a limited number of physicians will be accepted for each course. The only cost to the individual is for room and board and \$25.00 (\$10.00 of which is refunded at the completion of the course). Applications and inquiries should be addressed to:

Post-graduate Course, Department of Obstetrics and Gynecology, 5848 Drexel Avenue, Chicago.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

A 20-YR.-OLD SCHOOL-TEACHER consulted me on Jan. 12th, 1917, complaining of pain in the back of her neck and a general eruption. Three days previously 4 lumps had appeared in the back of her neck, and a 5th one appeared the night before coming to me. Her neck had been stiff and sore from the beginning of her trouble, her appetite and sleep poor. She had slight sore throat, and slight photophobia. She had a very severe attack of measles about a year previously, in which I attended her. Nothing in her history threw further light on her trouble except that she had been in contact with at least 5 persons who had just recovered from German measles.

The patient appeared comfortable. She showed slight lacrimation and congestion of the eyes, but her eyes are especially susceptible to all influences. No Koplik's spots. There was very marked enlargement of the posterior cervical lymph nodes. They did not fluctuate. There was a pale rose-pink rather morbilliform general eruption. No fever. Pulse 94. Respiratory rate 20.

Diagnosis: German measles. No treatment was required. Recovery was uneventful.

Discussion: German measles is unusual in our part of the country in endemic form. It appears in epidemics, and then disappears entirely from the community, often for several years. When it first reappears, the diagnosis may be missed through failure to think of it. Of course, in a case like this, with a history of having had measles and of exposure to German measles, the diagnosis is obvious. The sensitiveness of the patient's eyes, however, suggested measles, but the past history, absence of Koplik's spots, of fever and of acute respiratory symptoms, and the general well-being of the patient, excluded that diagnosis.

ON OCT. 24TH, 1927, a 24-yr.-old school-teacher complained of sudden transitory dimness of vision. A week previously she had such an attack for the first time. In this she got dizzy and couldn't see much, though she had light perception. This was followed at once by nausea, but no vomiting. She has not fainted or lost consciousness. The 1st attack lasted 10 or 15 minutes. She had a slight attack the next day. Two days before consulting me, while in a stand at a football game, facing the sun, she had 2 short attacks, one right after the other. She goes through these attacks sitting up, and never falls. She ate a honey-dew melon before her first attack, but nothing unusual before the

other attacks. She had been told, not long before, when she had her tonsils and adenoids removed, that she was somewhat near-sighted, but did not need glasses. She had very recently, however, had unusual eye-strain in grading poorly-written 4th-grade papers. Her sister noted that her eyes were puffy two days before coming to me. She had conjunctivitis 2 years previously. There was nothing else of significance in her history.

Examination showed nothing of significance as recorded. The urine, voided just at the end of a menstrual period, contained considerable pus, and, naturally, a trace of albumin.

I did not make any diagnosis, but referred her to an ophthalmologist, Dr. O. B. Bonner, who reported that she had a slight increase of intraocular tension in her left eye, though no cupping of the disc. He kept her out of school for a week under a miotic. Her urine cleared up in a few days without treatment.

Diagnosis: Acute glaucoma.

Discussion: This was a mild case. Severe cases are true ophthalmic emergencies, as the sight may be destroyed very quickly. *No mention is made in my record of any attempt on my part to estimate the intraocular tension.* This was an error of omission. In such a mild case, I might not have discovered it anyway, but I should have palpated the eyes. Incidentally, we really should routinely palpate the eyes of our patients, in order to get a "tactus eruditus" with reference to intraocular tension, if we hope to be able to detect any but the most severe degrees of increased intraocular tension. In any case of doubt, the patient should be promptly referred to an ophthalmologist.

Another case of a very different type in which I made a ridiculous error comes to mind. I had just returned from New Orleans and found a man waiting on my front porch holding his hand over one eye and apparently crying out with pain. He told me he had been to a Charlotte ophthalmologist, whom I knew, who told him he had glaucoma and had given him some drops to use. Palpation showed that the affected eye was almost as hard as a rock. (No, it was *not* a glass eye—nothing *quite* that ridiculous!). I warned him of the dangerous nature of his condition and told him he must go back to the ophthalmologist at once. He said he couldn't go to Charlotte that day, and might not find the doctor, anyway, as it was Sunday. I then told him he must go to a local man, at least as a temporary measure in his emergency, and called Dr. Bonner and made an appointment for him, and (this was my chief error) gave him a hypodermic of morphine to relieve his apparently great pain. I later learned that he never consulted

Dr. Bonner, who went specially to his office that Sunday morning and waited about an hour for him. A few days after, I happened to mention the case to my friend, Dr. E. T. Harrison, who broke out into a big laugh and said, "Why, don't you know who that was?" That is the notorious ———. He has glaucoma, all right, but it is chronic glaucoma, and he has been totally blind in that eye for 10 years. He has been advised to have it out, for fear of sympathetic ophthalmia destroying the other eye, but he won't do this, as that glaucomatous eye is his best asset to get morphine from doctors."

Discussion: Not being an ophthalmologist, the error may have been pardonable, but all such cases, once they have deceived a physician, should be reported at the next meeting of the county medical society, even though it may mean a mild discomfiture of the physician reporting his error.

I well recall another case which I did so report, that got me much laughed at, or with, because a number of others were in the same boat. I had just returned to practice, late in 1929, after 1½ years' absence working for the State Board of Health. A woman, dressed handsomely and painted like a clown, came to my office and told me she was a Mrs. Thompson of Thompson's dairy farm, out in the Deep River section. I thought I knew the Deep River section pretty well, and did not know of any Thompson's dairy farm there, but reflected that changes had, no doubt, occurred in that community during my absence. So, I listened to her story. It seemed that she had a poor old mother dying of cancer, who had just been to Dr. Howard Kelly, who had told her that nothing could be done but to give her enough morphine to make her comfortable. I told "Mrs. Thompson" that I would be ready to go see her mother in about 15 minutes. Then she began to demur, saying that the road was so bad that she feared I could not get out there with my car. However, she admitted that she had driven a car in, and I made the obvious reply that I could take a car anywhere she could. Then she asked why I should go out there—why not just give her a prescription for some morphine for her mother and save all that trouble. I replied that I never gave a prescription for anything for a patient I never saw, let alone a narcotic prescription! She then gave me directions how to get out there. I followed the directions, and drove around the Deep River section for an hour or so, trying to find Thompson's dairy farm, only to be assured by all of the many people I knew out there that there was no such place. The whole set-up—the type of clothing and make-up worn by the woman, the story she told, her objection to my going out to see her mother, and the

fact that I knew of no such family in the Deep River section made me suspicious from the start; but I determined to run the matter down and find out what it was all about, if possible. The next morning I found a note on my desk to call a medical friend, did so, and he asked, "What were you doing looking for Thompson's dairy farm in the Deep River section yesterday afternoon?" I replied, "How did you know I was out there?" He then told me he had done the same thing an hour or so after I had gone out there. It seemed that the woman had gone to several doctors in one afternoon, hoping to get a prescription for morphine. The old mother and the farm were, of course, pure fiction. On reporting the incident at the next meeting of the Guilford County Medical Society, such an outburst of horse-laughs developed that I wondered why, till I learned that a number of Greensboro men had spent the next day (Sunday) after my episode, looking for a Thompson's dairy farm around Greensboro! It seemed that there was a gang working from Charlotte to Durham, trying to get morphine in this way. I informed the police, but if the woman was ever caught I do not know it.

THE THERAPEUTICS OF INTERNAL DISEASES: Volume III, Supervising Editor, GEORGE BLUMER, M.A. (Yale), M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine; Associate Editor, ALBERT J. SULLIVAN, M.D., Adjunct Clinical Professor of Medicine, George Washington and Georgetown Medical Schools. 1941. \$40.00 per set (of 4 volumes).

This volume, just made available, covers diseases due to fungi, metazoan diseases, protozoan diseases, intoxications, diseases due to physical agents; the treatment of edema, dehydration, acidosis and alkalosis; pre- and postoperative treatment; treatment of diseases of the lower respiratory tract; treatment of heart diseases and diseases of the blood and lymph vessels.

Our own Dr. David T. Smith writes the excellent chapter on Diseases Due to Fungi.

Some confusion exists in the medical world as to the relative value of the different agents used against malaria. Here is a dependable statement of the case.

The treatment of edema is given in great detail. Sodium lactate is recommended instead of sodium bicarbonate in the treatment of acidosis. Digitalis retains its place as chief heart drug.

Not only what to give, but what not to give, is included in this comprehensive work.

These few samples attest the value of a set of books which may be depended upon to "grade to sample" as we say of cotton or tobacco.

ALLERGY to liver extract is not unknown.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

PELVIC EXAMINATION

A PROPER pelvic examination will enable a doctor to diagnose accurately practically all the ordinary pelvic conditions that are likely to be present in a multipara. There is no field of diagnosis more neglected than that of the pelvic examination.

Evaluation of the findings, so necessary for institution of proper treatment, including time for and choice of operation, involves often a great many difficulties. First have a history, especially that pertaining to the pelvis. Among other things, this should include previous diseases and injuries, childbirth, miscarriages and any history of discharge, flooding or pelvic inflammatory disease. Unless a very accurate history is obtained the examination will not be as complete as it would be otherwise. For example, the only way in which a weakness of the vesical sphincter muscle can be determined is by asking the patient. Unfortunately many a woman, on being asked if the bladder leaks will say "no"; but on closer questioning or repeated questions, and if you ask "when the bladder is full and you strain, lift, sneeze, cough or laugh does some urine leak out?", in many cases you will get a prompt answer of "yes." This establishes the fact that there is some leakage from the bladder under certain circumstances and is the only means by which we can tell whether or not the vesical sphincter muscle is competent.

A history of backache, pain in the pelvis, bearing-down sensation as if everything in the abdomen were coming down, constipation, leucorrhea, menorrhagia and metrorrhagia should be carefully inquired into before the examination is made.

The examination should be done with the patient in the proper position on the table for pelvic examination. A good speculum should be available and also a good light which will enable the examiner to see plainly the external parts, the vaginal area and the cervix. In addition, there should be two cotton applicators for collection of smears, one for trichomonas and the other for gram-negative organisms. Lugol's solution should be available. An elaborate array of instruments is not necessary.

Examine the external genitalia, noting any abnormalities, large veins, growths, ulcers, or other pathology. The clitoris should be examined for adhesions. The presence or absence of discharge should be noted. Next the speculum is inserted gently and the cervix inspected. At this time secretions may be obtained on the cotton applicators

for examination. If there are any suspicious areas paint the cervix with Lugol's solution and it will aid greatly in differentiating between cancer and ordinary cervical erosion.

The presence or absence of rectocele or cystocele should be noted; the external urethra examined for prolapse, caruncle or other abnormalities. The speculum is withdrawn and by bimanual examination the condition, size, shape and position of the womb, cystic or enlarged ovaries, pelvic inflammatory disease, infiltration of the broad ligaments or other pathological conditions investigated. The patient should be told to strain a little and this will enable the examiner to determine whether or not there is any marked cystocele or if the uterus tends to prolapse. Now lubricate the finger, after changing gloves, and make a rectal examination for growths, hemorrhoids, fissures, or ringworm; for tears of the sphincter ani muscle, excess of fibrous tissue etc.

If there is any enlargement of the uterus suggesting a tumor or pregnancy, an x-ray examination may be advisable and will often aid in clearing up the diagnosis.

The specimen of the discharge removed for the examination of trichomonas infection should be immediately immersed in a small amount of normal salt solution. This simplifies the examination a great deal.

At the same time, the lower abdomen should be examined for the presence of scars, diastasis or any other abnormality.

After the examination is completed, if there are any points about which you are in doubt these should be rechecked. A careful record should be made, including diagnosis and treatment recommended. These should be written down so that they can be discussed in detail with the patient that day or later on.

The patient should be informed of any trouble that may be found and the treatment carefully outlined. It is important to make the plan of treatment clear to the patient. Unless the proper treatment is given, the examination will not be of much use.

Where there is to be some delay about instituting surgical treatment, the patient should be given appropriate treatment in anticipation of operation. For example, leucorrhea should be treated and also cystitis. Chronic constipation is another cause of trouble and should be relieved.

By giving every patient a thorough and careful examination, many lives will be saved, early malignancies will be noted and many pelvic conditions resulting from childbirth will be noted and properly corrected, bringing relief and comfort to the patient.

IN MEMORIAM

TRI-STATE MEDICAL ASSOCIATION

1941

(To be concluded in our next issue)

DR. CHARLES OLIVER DELANEY

DR. G. CARLYLE COOKE, Winston-Salem

CHARLES OLIVER DELANEY was born in Union County, North Carolina, January 15th, 1895. He died in Winston-Salem at his home December 15th, 1940.

He received his education in the Union County schools, finished his first two years of Medicine at the University of North Carolina in 1917, and was graduated from Jefferson Medical College in 1919. In his final years at Jefferson he was in the S. A. T. C. of the Medical Reserve of the Army. He had his internship in the Sacramento County Hospital in California where he was Medical Director for one year.

He took up his practice of urology in Gastonia, N. C., and moved to Winston-Salem in 1924.

He was a past president of the North Carolina Urological Society, and was president of the North Carolina Baptist Hospital Staff at the time of his death.

Dr. DeLaney was a pioneer in urology in the State; he was satisfied with nothing less than the best. No better example of his taste for the esthetic, as well as the superlatives of life, can be found than in the luxurious offices which he maintained as his workshop.

In his social activities as well as with his patients, he always had an attractive and winsome portion of life's humor to dispense.

He is greatly missed by the profession of Winston-Salem and by all who knew him.

DOCTOR HARRY ERNEST HEINITSH, JUNIOR

DR. W. B. LYLES, Spartanburg

H. E. HEINITSH, JR., was born in Spartanburg, November 16th, 1894, the son of Dr. H. E. Heinitsh and the late Bessie Means Heinitsh. Graduating from Wofford College he took his professional training at Jefferson Medical College, and his internship and residency were served in the University of Pennsylvania Hospital. For a period of the World War Dr. Heinitsh was stationed in Philadelphia as a member of the United States Army Medical Corps.

Returning to his home town he practiced his profession among those who had known him and

his forebears for generations. A fine, well-trained mind and a thorough knowledge of medicine were not the only assets of this young physician, for with these he was endowed with a gentle sympathetic heart, an unselfish devotion to duty and the highest integrity. These attributes naturally drew to him a large practice from all walks of life, yet neither purse nor position governed Dr. Heinitsh's zeal and interest in his patients. The poorest and humblest received alike the same devoted attention and care as did those of means and power. Never sparing himself, putting his patients first and forgetting self, contributed to the rapidity with which he succumbed when attacked in his last illness.

In 1934 Dr. Heinitsh married Annette Blake Franklin. She with his son and an adopted daughter survive him.

The untimely death of Dr. Heinitsh on June 20th, 1940, left a stunned and bereaved people. A useful and a beloved life was taken, leaving his family, friends, patients and colleagues to sustain an irreparable loss.

DOCTOR EMORY HILL

DR. WALTER J. REIN, Richmond

ON December 4th, 1940, Dr. Emory Hill stepped through a door in an old wall. He was born on September 8th, 1883, at Scottsville, Virginia. He received the A.B. degree at Columbia University and then pursued his professional studies at the Medical College of Virginia, where he was graduated in the class of 1907. Thereafter, he spent a year under S. Weir Mitchell at the Orthopedic Hospital and Infirmary for Nervous Diseases in Philadelphia. He later interned for a year at the Wills Eye Hospital, also in Philadelphia. He started the practice of his profession in Chicago in 1910. While there he took advanced graduate work at the University of Chicago and later was on the faculty of Rush Medical College. In 1919 he returned to Virginia to open offices in Richmond, where he was accorded recognition as one among the ablest eye specialists in this section of the country. In 1929 he succeeded the late Dr. Jos. A. White as Professor of Ophthalmology in the Medical College of Virginia, a position he held until about two years ago.

Dr. Hill was a Fellow of the American Medical Association; a member of the College of Physicians of Philadelphia; a member of the American Ophthalmological Society, of which organization he was secretary from 1925 through 1932. He also served in various capacities in state and local medical societies. He was chosen to a place in "Who's Who in America" in 1937.

Though he was not a prolific writer he did write, and with clearness, conciseness and practicability. Much of his work has been published in the leading journals. All these honors he carried with extreme modesty.

Dr. Hill was the first in Virginia to limit his practice to ophthalmology. It may be said that he was the pioneer of ophthalmology in this section of the country.

Richmond owes its eminence as a medical center in part to the fact that during the past quarter century several men who have ranked with the best in their field in America labored here. Dr. Hill was one of them and as a member of the faculty of the Medical College of Virginia did his part to bequeath his skill and his art to the next generation of physicians of his State and Section. He served that institution with true devotion in all capacities, to a degree far greater than is generally known. He desired his students to acquire a sound, practical knowledge. He had perseverance and determination. His work was never perfunctory but painstaking and thorough and always properly aggressive. His tireless energy, wise counsel and genuine sincerity made him an ideal leader. Among others of his creative plans was the development, beginning in Richmond, of an of an increasingly active, now State-wide system of "Sight-Saving" classes in the schools. By reason of his great knowledge and experience he spoke authoritatively on all phases of ophthalmology. His inquisitive mind spurred him on to learn everything possible from every case. He was a keen diagnostician, whose sound judgment and practical suggestions made him the ideal consultant. The patient who went to Dr. Emory Hill recognized immediately the sureness, the certain touch, which distinguishes the born physician; the embryonic ophthalmologist privileged to come under his tutelage was indeed fortunate.

A few more words about the man. Duty was for him the superior law. An honest mind and reliability were to him indispensable; he despised an untruth. He seemed often to be cold and not easily approachable, but this was only the expression of an efficiency. His concentration on efficiency in his work and his unwillingness to divert his attention by needless talk seemed to some people abrupt, on first acquaintance; but as they knew him better they realized his personal interest. Rather than a multitude of lukewarm friends, he enjoyed some very close ones, and not many knew the man of subtle humor, quick repartee and care-free disposition. When released from the pressure of work he could relax into a boyish gaiety; he was a charming companion. His family, his science, his

ample diversified library, and his love of music provided him with richness in life.

In his death ophthalmology lost one of its truly great men, a highly successful practitioner and dexterous surgeon, a generous teacher and a true friend; all lost a fearless, inspiring leader, a great teacher, a wise counsellor, and a just man.

DOCTOR EDGAR ALPHONSO HINES

DR. ROBERT WILSON, Charleston

IN the death of Edgar A. Hines the most conspicuous figure in organized medicine in South Carolina passed from among us.

Graduating from the Medical College of the State of South Carolina fifty years ago he devoted himself from the beginning of his career with singleness of purpose to the advancement of his chosen profession; and from the time he assumed the secretaryship of the State Medical Association, more than thirty years ago, he played a large part in every movement affecting medical organization in the State of his adoption.

His public activities have been set forth abundantly in the memorials which have been published since his death. Here let me speak a word of the man whose loyal friendship I have enjoyed for half a century.

Living always at the highest level of professional attainment, a few years ago in spite of his advanced age he successfully passed the qualifying examination in pediatrics, the branch of medicine in which he was most deeply interested. In practice as in public health and in medical education he was content with nothing less than the best.

Courteous, genial and considerate of others, he never incurred the ill will of his confreres and none was ever known to speak evil of him. He was loved by those who knew him and admired by all for his unfailing energy and ceaseless industry.

Aware of his fatal malady, he refused to rest or to lay aside any of his activities, preferring to die as he had lived in useful service, and in the early morning of January 27th, 1940, after returning home from a medical meeting in a neighboring city at which he had delivered an address on the medical preparedness program,

"God's finger touched him and he slept."

DOCTOR HENRY GRADY LASSITER

DR. W. G. SUTTER, Weldon

HENRY GRADY LASSITER, a beloved physician of Weldon, and an active member of this society, died August 1st, 1940, following an illness of thirty-six hours. Henry Lassiter was born in Northampton County, N. C., September 13th,

1891. He spent the early years of his life under the influence and guidance of the late Doctors M. Bolton of Rich Square, N. C., and R. P. Morehead of Weldon. He entered the University of North Carolina in 1911 and completed his medical course at Jefferson in the class of 1917. He volunteered his services to the government for the duration of the World War and was assigned to an internship in the Camden Hospital, Camden, New Jersey. In 1918 he located in Weldon where he spent a useful and unselfish life. His widow, Mrs. Willie Musgrove Lassiter, and two children, Alex, aged 16; and Jane, aged 12, survive him.

Dr. Lassiter was a trustee in the Weldon Methodist Church, past president of the Halifax County Medical Society; and a Fellow of the Medical Society of the State of North Carolina, of the Tri-State Medical Association of the Carolinas and Virginia, and the American Medical Association.

"Dr. Grady," as he was affectionately called, began and continued his practice in a strictly ethical but quiet and unassuming manner. Although deeply interested in civic, religious and other worthwhile activities, he left it to others to take the leadership in those fields that he might spend all of his time and energy with his patients whom he loved and served faithfully all through the years. Particularly considerate and patient was he in his service in the chronic and nervous cases, that so often tax the patience of physicians. He always had the time to listen to their problems and to guide them in a helpful way. In this present-day busy world of scientific precision and diagnostic accuracy we here may well emulate this virtue of his, and not forget the patient in our search for a diagnosis.

The following tribute was paid him in our town paper: The call of human suffering was the beacon which he followed without regard to race or color, to financial or social standing. He ministered to both the bodies and the spirits of the people he served. The old, young, white, colored—more and less prominent—who came to his home for a last look at the remains; the many whom he had served. The old, young, white, colored—more and less prominent—who came to his home for a last look at the remains; the many whom he had served, even supplying medicine and other necessities without thought or hope of financial reward, all bear silent testimony to the genuine affection which was universally his. His memory is inscribed in letters of his own life's blood on the hearts of the many he served so faithfully and well.

"Whosoever will be great among you, let him be your minister; whosoever will be chief among you, let him be your servant."

DOCTOR JOSEPH AUGUSTUS WHITE

DR. NIELSON H. TURNER, Richmond

AFTER a lingering illness, Dr. Joseph A. White passed away on February the fifteenth, 1941.

He was born on April the nineteenth, 1848, of an old Catholic family, in Baltimore, Maryland. His father, Ambrose A. White, was a prominent merchant of that city. His mother was Mary Hurley White. Abraham White, his great-grandfather, was a Major of Artillery in the Revolutionary War, and was present at the surrender of Cornwallis at Yorktown.

His preliminary education was received at Rock Hill Academy at Ellicott City, at Loyola College in Baltimore, and at Mount Saint Mary's College, at Emmitsburg, Maryland, from which institution he obtained the following degrees: A.B. in 1867, A.M. in 1869, and LL.D. in 1929.

He began the study of Medicine at the University of Maryland in 1867, and the M.D. degree was bestowed upon him in April, 1869. During one year of this time he served as an interne in the University Hospital. He began postgraduate studies at the College of Physicians and Surgeons in New York, where he remained until September, 1869. For the next three years, he remained in Europe continuing his preparation, spending time at the following places in the order named: in England, in Paris and in Germany—at Freiberg, Heidelberg and Berlin—returning to America in 1872.

This same year he began the practice of the specialty of ophthalmology, otology, rhinology and laryngology in Baltimore, when he was appointed Professor of Ophthalmology at Washington University Medical School.

In 1879, on invitation from a group of prominent physicians, he located in Richmond, where he soon became prominent socially and professionally, and because of his accomplishments his renown quickly extended throughout the South.

He was one of the founders of the University College of Medicine in Richmond. The first free clinic in Richmond for the treatment of disease of the eye, ear, nose and throat, was established by him, and for many years he contributed to it in service and in donations.

He was Professor of Ophthalmology and Otolaryngology in the University College of Medicine, later Professor of Ophthalmology in the Medical College of Virginia, and at a subsequent date in this same institution he received in addition an appointment as Professor of Oto-Laryngology, and he continued to hold these positions until his

eighty-second year, when he became Professor Emeritus. He has been President of the Richmond Academy of Medicine and Surgery; of the Medical Society of Virginia; of the Tri-State Medical Association of the Carolinas and Virginia; of the Virginia Society of Ophthalmology and Oto-Laryngology; of the Richmond Eye, Ear, Nose and Throat Society; of the American L. R. and O. Society, and of the Virginia Society of the Sons of the American Revolution; and Chairman of the Section on Ophthalmology of the American Medical Association.

Among the additional Clubs and Societies in which he held membership are the American Ophthalmological Society, the American Otological Society, the West Virginia Medical Society, the Westmoreland Club, the Commonwealth Club, the Richmond German Club, the Deep Run Hunt Club and the Country Club of Virginia.

Over two hundred articles and addresses before Societies and in papers pertaining to his specialty were contributed by him. Several useful instruments, including a palate retractor and a tonsil forceps, were invented by him, and the widely used White's ophthalmic ointment was devised by him.

Many gentlemen successful in this specialty received their training in association with him, and he was always eager to and took a delight in helping them, giving the benefit of his many years of experience.

In 1877 he married Miss Sophie Berney, the daughter of Dr. Jas. Berney of Montgomery, Alabama. His wife died in 1901. He was devoted to his family, and because of his consideration and love for his children he never remarried. His daughter, Mrs. R. A. P. Walker; and grand-daughters, Mrs. Jno. M. Taylor, Jr., and Mrs. W. Garland Richardson, survive him.

That he remained among the distinguished in his chosen field is no surprise, when it is known that he was constantly on the alert in attending society meetings and perusing the literature in search of information for the benefit of his patients. From time to time he did experimental investigating, but as he told me on several occasions, he always tried it on himself first in each instance.

His ready wit and keen sense of humor, along

with his loyalty, his sincerity, his unselfishness, his punctuality, his love for the truth, resulting naturally in frankness, and his many other fine qualities endeared him to his numerous friends and associates.

With him it was a question of service, and the question of compensation was of secondary importance. He received and treated gratis in his office a great number of patients whose pride forbade them to go to the dispensary.

He was a devoted communicant of the Roman Catholic Church, and as the officiating priest said of him in his funeral oration, "He Kept the Faith." Late in his life when he became incapacitated, he arranged to have the priest visit him weekly so that he could continue to worship his Maker according to the dictates of his own conscience.

His death has resulted in a great loss to his family to his friends, and to the whole of the medical profession.

DOCTOR JAMES THRUSTON WOLFE

DR. CHARLES S. WHITE, Washington

DR. JAMES THRUSTON WOLFE was born at Front Royal, Virginia, on July 1st, 1881. He graduated in medicine from the George Washington University in 1908 and served his internship at Providence Hospital, Washington, D. C. After entering private practice, Dr. Wolf attracted a large number of patients by his untiring efforts in their behalf and by his enthusiasm and kindness. He was a frequent attendant at medical societies, where he expressed his views without restraint, even though they were at variance with commonly accepted principles. Dr. Wolfe contributed many articles to medical journals and enjoyed a large circle of friends both in and out of the profession. Surviving are his wife, Mrs. Elizabeth Young Wolfe, a sister, Selina Wolfe, and a brother, Scott A. Wolfe. He was a member of the Tri-State Medical Association from 1935 until his death, Dec. 8th, 1940, and few, indeed, have been the members who have put forth more energetic effort in that length of time. We missed him in this meeting and we shall miss him as the years go by.

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

MONDAY MORNING SESSION

February 24th, 1941

The opening meeting of the Forty-third Annual Session of the Tri-State Medical Association of the Carolinas and Virginia, held at the O. Henry Hotel, Greensboro, convened at 10 a. m. Monday, February 24th, 1941. The meeting was called to order by Dr. Clyde M. Gilmore, Chairman of Committee of Arrangements.

Dr. Gilmore: I want to introduce to you our fellow townsman, the President of the Guilford County Medical Society, who will welcome you. Dr. Fred Patterson. (Applause.)

Dr. Patterson: Mr. Chairman, Dr. Gilmore, Dr. Andrews, Fellows of the Tri-State Medical Association: The Guilford County Medical Society extends to each member, guest and visitor the right hand of fellowship. We are pleased to have you and hope your stay here will be very pleasant. Thank for coming. (Applause.)

Dr. Gilmore: Thank you, Dr. Patterson.

Our response will be made by Dr. C. J. Andrews, of Norfolk, Virginia, President of the Association. Dr. Andrews.

President Andrews: Mr. Chairman, Fellows of the Association: It is with a great deal of pleasure that I express the appreciation of the Tri-State Medical Association for the hearty welcome which Dr. Patterson has extended to us. The reputation of Greensboro and its profession and people is well known. So far as the Tri-State is concerned, we have unusual evidence of it. The Tri-State's meeting in Greensboro in 1929, I am told by Dr. Hall, was the first occasion on which the plan which will be put on here this time of clinics was instituted. Incidentally, Dr. Hall tells me that that was the best meeting the Tri-State has ever had. Of course, I don't know how much was due to Dr. Hall and how much to Greensboro, but I am going to give most of that to Greensboro. We thank you. (Applause.)

Dr. Gilmore: Our President, Dr. Andrews, will now take charge of the meeting and we will go ahead with the program.

MONDAY EVENING SESSION

Banquet at 6:30 p. m. in the Main Dining Room of the O. Henry Hotel to First-Meeting (1899) members, guest speakers, ex-presidents, officers and their ladies. Dr. J. M. Northington master of ceremonies.

Dr. Northington: Ladies and Gentlemen: The honor guests of this occasion are those who participated in the first meeting of this Association forty-two years ago. That is not a long time for a man to live but it is a long time for him to endure what he has to endure as a practitioner of medicine.

First I want to present to you Dr. Buckner of the City of Roanoke, Virginia, which when he first started practicing medicine was called Mud Lick. Dr. Buckner.

Dr. Leigh Buckner: Dr. Northington, Ladies and Gentlemen: I correct the gentleman, to begin with. He has slandered by home. It was Big Lick. (Laughter.)

I am very grateful to this Society for inviting me here. While it has been embarrassing to be held up as an antique, still I feel that I have the keys of the house. The grinders haven't ceased and even the grasshopper is not a burden. I appreciate the fact that the apple tree has flourished and most of the petals have dropped and when I look around at you younger men here, I realize that you are following along that road, too.

I want to thank you very heartily in the name of all the old founders of this organization for the splendid job you have done in bringing it to its present state of efficiency. I know I express their wishes when I say that they hope that you will make every year a milepost in the further and splendid development of the Society. (Applause.)

Dr. Northington: Another distinguished member of this venerable group we delight to honor ourselves in honoring is Dr. Robert Gibbon, of Charlotte.

Dr. Gibbon: This is quite a surprise. I can only congratulate myself on being in such good company (Applause.)

Dr. Northington: Another in this group of distinguished gentlemen who have been distinguished in former times, and more distinguished in later times, is Dr. Hubert Royster. (Applause.)

Dr. Royster: Ladies and Gentlemen: The ingredients of an afterdinner speech consist of a joke, a platitude and a quotation. The joke is before you. (Laughter.) The platitude is—I regret, ladies and gentlemen, that you called upon me for this impromptu speech, as I am totally unprepared. (The fact is that I have known for two weeks that I was going to make this speech.) So, that is a lie. The quotation is,

"Of all sad words of tongue or pen,

The saddest are these—it might have been."

In 1905 I was elected President of this Association here in Greensboro. Of course I was a very young man, and through the years I have continued to reserve the niche which was preserved for me from time immemorial. It was discussed

and voted to make retiring presidents honorary members, so that after my retirement I was made an honorary member. Along about twenty years afterward I thought it better for me to resign and get other men in. Hon. J. K. Hall, sitting here at my right, said when I handed in my resignation that it was impossible for an honorary member to resign, so here I am thirty-six years after my election. I believe I am the oldest in seniority if not in years. I went to Edinburgh—in 1913 I believe. I had a friend on my hands and somebody had him on his hands. We got together in that Scotch town where the carts stop running during church hours. I thing he is older than I am in years at least.

I have done my duty, Mr. Toastmaster. It is the duty of every speaker called upon to stand up, speak up and shut up. (Applause.)

Dr. Northington: I have been requested, Ladies and Gentlemen, to add to this list of distinguished speakers some others equally distinguished. Dr. Robert Wilson, of Charleston. (Applause.)

Dr. Wilson: (Applause.) I was not one of the founders.

Dr. Northington: I beg your pardon, but you are cited for other services, by reason of your other distinguished attainments.

Dr. Wilson: Well, I feel very much like Dr. Royster. The joke is before you. I can only say, my friends, that I am very grateful to be here with you this evening. Not like Dr. Royster, I was not informed two weeks ahead that I would be expected to make a speech, therefore these few remarks are absolutely impromptu. Dr. Royster was able in advance to prepare something that was really worth while. Unfortunately I didn't know until the moment Dr. Northington asked me to get up, so I have nothing more to say than to express my appreciation for being here, for being singled out to say a word and for having had the distinguished honor of being your President one year. (Applause.)

Dr. Northington: Dr. Wilson, whether or not he be prepared in his own sense of being prepared, is always prepared, and we can always count on hearing from him words fitly spoken, which a wise man has likened to apples of gold in pictures of silver. Dr. James K. Hall.

Dr. Hall: Ladies and Gentlemen: I feel disparity, both socially and intellectually. I have been seated for the last hour before a very good meal and between a Dean and a former Dean. You can imagine why I feel so with a Dean on my right and a former Dean on my left.

This has been a night of memories with me. Dr. Robert Wilson presided over this meeting at

Virginia Beach in 1928 and I here in this hotel, perhaps in this room, in February, 1929. Someone told me afterwards that here, at that meeting in 1929, was held the first psychiatric clinic in this State. We had a good many other clinics. It is a night of memories with me. I attended the meeting of this organization the first time in the Jefferson Hotel in Richmond in 1910 and did not miss a meeting for a good many years. I never missed one when I could help it. I am sorry I couldn't get here early this morning. This is a splendid Association. The best medical men in the Carolinas and Virginia have been members for—how many years—forty-two. I attended a few weeks ago at the University of Virginia the funeral of Paul Brandon Barringer. Wasn't he one of the founders?

Dr. Northington: He was. There were seventeen of these founders-survivors and three of them have died in the last month, after the invitations were extended, which leaves fourteen.

Dr. Hall: Well, I am happy to be here and I am happy that you are all well and that you are all here together and I expect this organization to continue its good work year after year. (Applause.)

Dr. Northington: Is Dr. W. C. Davison present?

Dr. Davison: Ladies and Gentlemen: I can't possibly have been a member for forty-two years but I have been a member for one-third of that, fourteen years. Like the other gentlemen who have spoken, I have greatly enjoyed being here and attending this meeting.

Dr. Northington: Dr. C. C. Carpenter.

Dr. Carpenter: I can't boast of the number of years I have been a member of this organization, but I will say that I expect to be a member for the next forty years.

Dr. Northington: President Andrews will take charge of the program from here.

President Andrews: Fellows of the Tri-State Medical Association, Ladies and Gentlemen: I first want to take advantage of this occasion to express my appreciation of the honor which you done me in making me your President. I think it is an honor of which anyone might justly be proud, but particularly when I see the distinguished group which I will join at the end of this meeting as Past President.

Dr. Northington wrote me some time ago to know what would be the subject of my address. I told him, "Medical Problems and Projects." He wrote me a week or two afterward to know what it was and I told him the same thing. However, he has given me a better title, "Problems and Progress," and the thought occurs to me that this

is not necessarily medical problems. I think that we have been taking too much to ourselves. The problems we call ours are problems of the people more than they are of us doctors, and the problems which the medical fraternity has been trying to work out are still those of the people, as we shall try to point out as we go along.

Dr. Andrews reads his formal address. (Applause.)

Dr. Andrews: The next part of the program is an address by the President-Elect, Dr. Brenizer. Is Dr. Brenizer present?

Dr. Northington: I speak for the President-Elect who was to have given me his address to be read by a proxy. I don't know what happened to Dr. Brenizer, but I do know that the outline or what he would have covered would have given an account of the organization in the great first World-War, of the organization, the transport, and the services of Hospital Unit O and Base Hospital 65. Unit O was aggregated largely at Charlotte, and brought into effective organization very early in the war. They did their bit for the cause of Democracy. They were amalgamated with Harvard Unit which had preceded them to Bordeaux and there they worked in close harmony in this integrated Unit and performed one of the most distinguished services of any Hospital Unit that functioned in World War Number One.

Base Hospital 65 was organized in this city and Winston-Salem. The moving influences were Dr. John Wesley Long, of Greensboro, and Dr. Frederic M. Hanes, of Winston-Salem. Dr. Long, as we all know, was a human dynamo. Dr. Long organized this Unit and, after training at Fort McPherson, Georgia, we went across the ocean to the seat of war, and wound up that little ball of yarn. Base Hospital 65 was organized originally as a Surgical Unit. It functioned largely as a Medical Unit, and it was so rumored, and most likely but for the early and unanticipated termination of the war, that for its functioning as a Medical Unit, each member of the organization would have had conferred upon him or her a distinguished service cross—rather a Croix de Guerre. I speak reverently as a member of this organization and in the city in which Dr. Long discharged his great service to ailing humanity. I pause to pay tribute to Dr. John Wesley Long, a man who was known to most of you and by every one to whom he was known was held in the highest regard as a man of ability and integrity and of zealous purposes.

If I had Dr. Brenizer's manuscript, I'd read it to you, but it will appear in the Journal of this Association. (Applause.)

President Andrews: In agreement with the time-honored custom, the best is for the last. Dr. Barker of Baltimore and Dr. Orr of Nebraska will address you in just a few minutes.

We will pause for just a moment while equipment is being set up.

Brief recess.

President Andrews: Next on the program is "The General Problems of Old Age" by Dr. Lewellys F. Barker, of Baltimore.

Dr. Barker read his address. (Carried in March issue of this journal.)

Dr. Northington: Mr. President, I would violate the tradition of this Association to say a few words in appreciation of this wonderful address and I say it largely in quotation marks. I speak as a voice from the grave. Dr. John Peter Munroe taught more men in medicine in North Carolina than any other human did and taught them well. One of the last things that he said to me, when, after several strokes, he spoke in a faltering voice which could be interpreted only by one who was used to his now-stumbling speech, when I mentioned to him the name of this great doctor, this great teacher of medicine, Dr. Barker, his brown eyes lit up with pleasure and he said, "Barker always tells you something to do for sick folks." And here is Dr. Barker to verify this statement of this dying patriarch of medicine in North Carolina, this Past President of this Association, gone to his reward within the past year.

Dr. Barker, we rejoice to have you here. (Applause.)

President Andrews: At this time I take pleasure in introducing Dr. W. A. Boyd, of Columbia, who will introduce our next invited and distinguished guest. Dr. Boyd.

Dr. W. A. Boyd: Mr. President, Gentlemen of the Association, Our Guests: In the last few years many drugs have been brought forward and presented to the medical profession as curative agents for the various infections that afflict mankind. Some of our confreres have been extravagant in their claims for the benefits to be derived from these drugs. Others have been more conservative. All of us, I think, are agreed that under certain conditions they are of benefit and helpful.

We are peculiarly fortunate tonight in having with us a man who has not sought publicity, a man who has taught us how to care for the acute and chronic infections of bone and joint, a man who has been recognized and honored by his colleagues everywhere, one who is not radical, one who is not conservative, one who gained his experience from careful analysis of his work, who will

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SOUTHERN MEDICINE & SURGERY

Official Organ

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AN EDITORIAL

BY

CLARENCE C. LITTLE, Sc.D.

Managing Director, American Society for the Control of
Cancer

ALL OVER THE COUNTRY today there is a new spirit of determination and resolution. We have watched overseas the clash of a cruel and coldly impersonal type of social order with the less efficient but far more human organization called Democracy. From the very outset we knew in our hearts which was right and which was wrong. Because of the very kindness and consideration on which our sort of civilization was founded we were at first unable to grasp the full menace of the forces arrayed against it. Now, however, we are awake, alert and active. We have taken up our position and we cannot relinquish it until final and complete victory. What a close parallel there is between this situation and that of the problem of cancer control.

For decades we have known that cancer is a cruel and ruthless killer, an enemy of homes and of human happiness. It has taken men and women in their prime—leaders in art, in science and in industry. It has broken up families and robbed children of their parents. For years it has been a menace breeding fear and discouragement.

Because other diseases were less vigorous and menacing, and because they provided us with less opposition in diagnosis and treatment, we have attacked them first and with more optimism. One after another they have been checked or beaten. Now, however, we are finally aroused as a people and have taken our stand as regards cancer. No longer can it be suffered to move unchecked and terrible. We know that it is vulnerable. It is no mystical being that can defy the assault of knowledge and science activated by courage and idealism. Some with special training knew this for some time, however, before it was possible to enlist and use the will of the general public in the fight. What has made the difference? Why can we today move forward with faith and hope?

It is the women of America who have made this possible. Rising as volunteers to participate in the organization of the Women's Field Army Against Cancer (a part of the work of the American Society for the Control of Cancer) they have done wonders. They have spread knowledge of the signs and symptoms that may mean cancer. Millions upon millions of people have received this information without cost. They have organized meetings which have been addressed by selected medical speakers. Under proper medical supervision, they have aided indigent patients to obtain diag-

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

nosis and treatment. They have removed much of the paralyzing fear of cancer that held the people powerless; they have transformed the whole battlefield against cancer from one where isolated raids were being made to a general and inspiring advance. They have brought courage and peace to thousands. They have begun to cheat Death of his prey.

This is good training for any sort of struggle, a type of preparedness for organized effort against tremendous evil. It is the logical and reasonable school for those qualities that Democracy must develop in order to survive. *That is why it is not only your duty but your privilege to take part in the fight against cancer.* To shirk that task is a poor prospect for your ability to meet the sort of challenge that Life will force upon all of us in the immediate future. To meet the call cheerfully and intelligently will help you to win other battles to come. The need is clear. Humanity calls. Enlist and Serve!

THE ADMINISTRATION OF ANESTHETICS BY THE NON-SPECIALIST

THERE is a popular idea that, in order to do anything passably well, one must not be able to do anything else. Only recently it came to my knowledge that neither the carpenter nor the plasterer any longer nails on the laths to hold the plaster. For that work the employment of a lather is required.

Along this same line of reasoning—or unreasoning, as you may choose—it has come to pass that many hospital authorities and others demand that all anesthetic administration be done by those carried in the American Directory as specialists in Anesthesiology; and this despite the fact that most of these specialists do all the general practice that comes their way.

A nice question might be raised and debated: Is the anesthesiologist any better qualified to practice general medicine and surgery than is the practitioner of general medicine and surgery to give anesthetics? And some intelligent doctors might even prefer a general practitioner who has kept abreast with the advancing knowledge of anesthetics, rather than a specialist, when the doctor himself, a member of his family, or one of his patients is to be put to sleep. Some doctors believe that broad familiarity with the health vagaries of humankind qualifies for correct evaluation of the new offerings in this as in other fields.

Whether or not one agree with this reasoning, in the vast majority of instances the anesthetic

must be administered by some person not a fellow of the College of Anesthesiology: so the idea of the author whose article here is abstracted—that general practitioners should be cheerfully accepted for this service and given whatever help they may need—is sound and sensible.

The great number of anesthetic agents being added and the complexities of the mechanisms for administration tend to confuse those of us whose intern days are some distance behind us. A brief of a specialist¹ in anesthesia who realizes that one must cut his garment according to his cloth is presented.

The inexperienced anesthetist, in an emergency, is prone to do the wrong thing or to overtreat the patient. Adrenalin is injected into the heart on the appearance of temporary apnea, rather than simple inflation of the lungs with pure oxygen. Inexperienced individuals do not accurately record the details of anesthesia. Consequently, it is possible to make the chart of a stormy, unsatisfactory and even dangerous anesthesia appear uneventful.

The Philadelphia County Medical Society for the past 14 months, through its Anesthesia Study Commission, has studied deaths during or within 24 hours of the administration of an anesthetic agent. During this period 28 deaths were considered preventable. A pathetic picture is painted especially by the number of instances when a direct overdose of a spinal anesthetic agent was administered (50 plus per cent). The selection of a dose of 200 mgm. of procaine for an appendectomy or 20 mgm. of pontocaine for the reduction of a fractured leg, is not reasonable. Particularly discouraging were the findings that when respiratory function ceased, through any cause other than circulatory collapse, in over 50% of instances cardiovascular stimulants or intracardiac injections were prescribed, instead of the comparatively simple but urgent remedy of administering oxygen into the lungs. In some instances the Anesthesia Study Commission believes that fatalities probably were initiated by some of the attempted resuscitative measures.

The inadequately trained physician usually will have a general practice which, at times, is used to obtain calls for anesthesia. A trade, open or implied, is consummated, whereby his surgery is referred to a given surgeon in order to obtain the privilege of administering an anesthetic agent to his patient.

When it is necessary for untrained individuals to administer anesthetic agents, it is advisable that they adhere to the more simple techniques and better-known agents. It may be highly beneficial

¹ H. S. Ruth, Merion, Penn., in *Bull. Am. Col. Surgs.*, Jan

to flow oxygen under the mask employed for drop ether anesthesia. Complicated equipment should be left to the specially trained. Spinal anesthesia should probably be reserved for the robust patient. Procaine in single or multiple doses is one of the best agents.

Until such time as a sufficient number of adequately trained anesthetists are available, other alternative measures should be given consideration. In smaller communities, younger men should be encouraged to study the literature and visit centers of anesthesiology, and for them the administration of anesthetic agents should be made more attractive and compensating. In larger institutions, much progress may be made by the addition of a well-trained anesthesiologist to supervise the remainder of the department, to attend the critically ill, to apply the more specialized techniques, and to share in the responsibility for the choice of anesthetics in cases of emergency. In any community, opportunity should be given by the organized medical profession to nearby anesthesiologists, so that interested physicians may institute educational campaigns in this field by conferences, study groups, and the presentation of papers.

We would amplify the suggestion thus: That this be made an exchange of knowledge, between the specialist and the general practitioner, each supplementing the knowledge of the other. A fair exchange is no robbery.

A POINT AS TO MAKING A LIVING BY PRACTICING MEDICINE

MANY doctors are getting a very precarious livelihood out of their practice. We could get a valuable lesson from considering all the implications of: It is not the high cost of living that bothers me, but the high cost of high living.

In a pediatric meeting some time ago a prominent specialist in this field made this frank, honest and intelligent statement:

This problem of income is a very serious one. I, very probably, have a little different situation in my office from most of the pediatricians practicing in the State in that I try to keep all of my patients that I can out of the hospital.

Whenever you hospitalize the patient, the hospital gets the bulk of the income and you don't get anything at all. I do all my own transfusions right in my office, my matching and everything else, and I charge those patients a flat fee. Sometimes I do 3 or 4 transfusions in a day, and I find it a very substantial source of income. My empyema cases I do not allow to go into the hands of a surgeon. I haven't in the past 10 years hospitalized a pa-

tient with empyema. I do that work right in my office.

It is admitted generally that the no-child to three-children families of today have made it pretty hard on the pediatricians. Another prominent baby doctor has put himself on record as favoring extension of the age at which a boy or girl is to pass from the care of the pediatrician.

When the editor was in college it was the general teaching that after seven years of life, for purposes of medical and surgical care, a human being partook more of the properties of those older than of those younger. The *passing* age has been much beyond that for a long time. Some years ago a good doctor who had for years been prominent as a pediatrician reported in a medical meeting the case of a patient, aged 78, whom he had treated a few weeks before. Where the age limit will go to is anybody's guess.

Back from the digression, we commend strongly the idea that pediatricians and all others who have to make a living out of the practice of medicine will do well to use discrimination as to sending patients into hospitals. Hospitals are a boon to the race—in certain cases. But there is no more reason for sending *every* patient to a hospital than for taking out *every* patient's tonsils or appendix.

Unnecessary hospitalization is responsible for much of the agitation about the cost of medical care. It always puts an unfair financial burden on the patient. Often it destroys all chance of the doctor being paid.

If you would put yourself, your wife or your child, sick the same way as is a certain patient, into the hospital; *and* if it were as hard for you to get hold of a few dollars as it is for the patient or the one who has to pay the patient's bills—by all means send to the hospital; otherwise do not.

Be considerate of your patients' health first; but be intelligently considerate also of their financial welfare, and of your own.

A RIGHT DIAGNOSIS "EPILEPSY" IS A TERRIBLE THING: A WRONG DIAGNOSIS "EPILEPSY" IS A HORRIBLE THING

THERE are over 500,000 cases of ordinary epilepsy in this country—more cases than there are of advanced tuberculosis, more than there are of diabetes. There is no chronic disease that carries more stigma than does epilepsy. There are so many correctable conditions that have been and are still being so labeled and so stigmatized as to make it appropriate that attention be called to them.

Convulsions may be caused by fevers of childhood, cerebral injuries, advanced arteriosclerosis or dehydration; but these conditions being self-limited proper diagnoses are soon made. Seven conditions are described as almost entirely simulating either petit mal, or grand mal seizures, and going for years with such a diagnosis, many having "epilepsy" written on their death certificates, and the stigma is passed on to subsequent generations.

The most common of the seven is the hypersensitive carotid plexus. The carotid sinus is the dilatation at the bifurcation of the common carotid artery. Just to its outer side is a nerve plexus which is apt to become hypersensitive, and its irritation to cause syncope, convulsions, urinary and fecal incontinence, and other symptoms of epilepsy. The diagnosis can usually be made by making rather quick, firm pressure on the carotid bulb. The carotid bulb is usually easily felt just under the angle of the jaw. The pressure maintained with slow massage for 30 to 45 seconds will bring on the symptoms. A case is reported of a man who had such attacks from wearing a very high, tight, stiff collar. He was advised to get a size larger, soft, low collar. His attacks became much less frequent and subsided completely when he was given belladonna to inhibit the vagal effect. No attack during the past two years except on one occasion when he left off belladonna for two weeks. Nearly all these cases can be relieved in one of four ways: with atropine, which inhibits the vagus nerve; with ephedrine, which relieves the depressor type by boosting the blood pressure; with vitamin B, which decreases the sensitivity of the carotid plexus; or by denervation.

The second condition, and the one which perhaps most nearly simulates epilepsy, is hypoparathyroidism, or chronic tetany. Tetany may come from the taking of an excess of alkali, or from prolonged vomiting. A history would always clear up this diagnosis, but a diagnosis of a true spontaneous hypoparathyroidism is difficult unless we consider it, and then it becomes simple. In such a case one is apt to have attacks of dizziness with falls, rigidity, cramping in the arms and calves, aura, lethargy, tongue-biting, cyanosis, clonic contractions. Then if he have too little blood calcium, a positive Chvostek and Trousseau's sign, a diet high in calcium, perhaps supplemented with calcium and phosphorus medication, will relieve.

The third condition is orthostatic hypotension—weakness, dizziness, syncope and sometimes convulsions when the patient assumes an erect position, deficient sweating, local or general, failure of pulse rate to increase when the patient stands up, aggravation of symptoms during hot weather, and secretion of more urine when recumbent than

when erect. In a case reported, on two occasions the patient had severe attacks while working and was told he had sunstroke. Examination disclosed that the blood pressure recumbent was 60 to 80 points higher than when erect. Three-eighths grain of ephedrine sulphate three times a day and elastic bandages to both legs for eight months brought almost complete relief.

The fourth condition to be considered is hyperinsulinism or hypoglycemia. To suspect it is to diagnose it; and, once diagnosed, the management is simple.

The fifth condition is that in which we see convulsive seizures as manifestations of brain tumor, a condition in which it is urgent that not a day be wasted if we are to obtain best results.

The sixth condition is congenital heart block. A girl aged four years fainted while playing in the yard and had a convulsive seizure; during the next three weeks she had a number of convulsions unaccompanied with fever, vomiting or other symptoms usual with childhood convulsions. The only abnormal finding was a pulse rate 40 to 48, during the attack as low as 36. Electrocardiogram indicated a bundle-branch block. Relief was given by atropine and ephedrine, and the child has gotten along well for several years with little trouble, and not labeled "epileptic."

The seventh condition the author quoted considers is convulsive seizures as a result of involvement of the central nervous system in secondary or tertiary syphilis. He cites a recent study at the University of Iowa Hospital of 100 cases of "epilepsy" of which 15 per cent were due to syphilis of the central nervous system. In the early secondary stage a mild meningeal reaction is not uncommon, and it may manifest itself by a generalized convulsion. In the late secondaries the meningovascular type of syphilis occasionally causes "epileptic" seizures. Tertiary lesions, particularly gummata, frequently cause convulsions, and they are common symptoms of dementia paralytica.

In the next case of vertigo, syncope, or petit mal or grand mal convulsions, we see we are well advised to consider carefully the following conditions and procedures:

Carotid sinus syndrome—pressure on carotid bulb.

Hypoparathyroidism—blood calcium determination.

Orthostatic hypotension—blood pressure, recumbent and erect.

Hypoglycemia—blood-sugar determination.

Central nervous system syphilis—blood and spinal fluid Wassermann reaction.

Brain tumor—x-ray examination, ventriculogram.

Congenital heart block—pulse rate and electrocardiogram.

How many of your patients have you wrongly labelled "epilepsy," and thus done them an irreparable wrong? How many have you assumed to be epileptics, considered their cases closed, and by this negligence lost for them their chance of cure?

TWO EXCELLENT POSTGRADUATE COURSES OFFERED NEAR HOME

At different times in the summer that is upon us two of our own medical schools are offering for merely nominal fees to make better doctors out of good doctors.

Duke University Medical School has arranged a practical course of instruction in Obstetrics with some incidental Gynecology—just the kind of instruction the men doing the bulk of this kind of work need. A clever idea is that of refunding a portion—nearly half—of the small fee to all those who complete the course. It's new to us and has our hearty approval. One who could evolve such an idea from his inner consciousness may be depended on to provide a course made up entirely of meat. (It turns out that it was another similar course which offered this feature, but Duke has something just as good.)

Write the Dean promptly. The course will soon begin.

The Medical School of the University of Virginia offers a Postgraduate Course in Medicine, for June 16th-21st. Final reservations must be made by June 10th. Those interested are requested to write the Chairman on Postgraduate Clinics promptly. Each applicant is sent a printed list of 67 subjects, with request that 25 preferences be checked and the list returned.

Each of the courses will include clinics, ward rounds and laboratory studies.

It's impossible to think of any place that so much is offered for so little. This is of the essence of progressive, practical medicine.

OUR DEPARTMENT OF LIFE INSURANCE MEDICINE

WITH this issue begins the conduct of a department having to do with the part of the practice of medicine of special concern to life insurance examiners. This is a large part, and much of this large body of knowledge is of daily usefulness in all other medical and surgical diagnosis.

The journal is fortunate in having procured the services of Dr. H. F. Starr, Medical Director of the Pilot Life Insurance Company, for employment in the editorship. Dr. Starr will write about and get contributions from other doctors high up in Insurance Medicine,

A large fraction of the income of a good many of us comes in the form of checks from life insurance companies. Some of the work for which such checks are sent is not done as carefully as it should be done. Indeed, some life insurance companies have had such disappointing results, have got so little for the money so spent, that they dispensed with the services of local medical examiners and began issuing policies on general appearance and what the agents could learn of the health history.

Dr. Starr will also request contributions for his department from local medical examiners, and others he thinks should be able to give us all information of value.

There can be no reasonable doubt that the Department of Life Insurance Medicine, under such editorship, will serve an excellent purpose and prove of all-round helpfulness.

DOCTOR GEORGE WILLIAM KUTSCHER, JR.

WE learn from the *Bulletin of the Buncombe County Medical Society* that Dr. Kutscher is dead. A good many months ago a letter from his secretary expressed for him regret that he was not able to supply material for his Department of Pediatrics in this Journal. Later came news of a surgical operation in Philadelphia, still later of the belief that he was on his way to complete recovery. Now he is dead.

For the past ten years Dr. Kutscher conducted the department in this journal devoted to the promotion and diffusion of knowledge of pediatrics. Except on the few occasions when he was too ill to write, his contributions came in on time; and they were always worth printing. They were never just fill-ins.

For the past six years he served as secretary of his county medical society, and served so faithfully and efficiently as to earn the gratitude and esteem of every member. He tended many children, sick and well. He was active in every movement for the promotion of children's physical, mental and moral health.

Too young is he cut down; yet—

"It matters not where, when.
Nor how, so we die well; and can that man that does so
Need lamentation for him?"

PROLONGED LABOR

PROLONGATION of labor, the author¹ pertinently says, has been confused with difficult labor to such an extent as to lead relatives into insisting upon ill-advised interference.

Dystocia is encountered 1) where the expulsive forces are subnormal and unable to overcome

1. E. F. Buchner, Jr., Chattanooga, in *J. Tenn. Med. Assn.*, Feb.

NEWS

UNIVERSITY OF VIRGINIA

On March 21st, Dr. John M. Meredith participated in the Post-Graduate Course in Medicine and Surgery for the Elizabeth City County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Surgical Aspects of Sciatica. On April 4th, Dr. Robert V. Funsten presented a lecture before this Society on Simplified Treatment of Certain Fractures, and on April 11th, Dr. William H. Parker spoke on Carcinoma of the Cervix.

On March 22nd, Dr. Fletcher D. Woodward addressed the Faculty and Medical Students of the University of Texas Medical College in Galveston. His subject was Diseases of the Esophagus.

The Phi Lambda Kappa Lecture was given on March 31st by Dr. Samuel Loewenberg, Professor of Medicine at the Jefferson Medical College of Philadelphia. He discussed Endocrinopathies.

At the meeting of the Alleghany-Bath and Greenbrier Valley Medical Society at White Sulphur Springs on April 3rd, Dr. Henry B. Mulholland spoke on The Modern Conception of the Treatment of Diabetes.

On April 3rd, the Southern Society of Clinical Surgeons spent the first day of their three-day annual meeting at the University of Virginia. After the operative clinic the following day clinic was presented in the forenoon: Thrombophlebitis in a Sympathectomized Limb by Dr. Edwin P. Lehman; Total Gastrectomy—Three Successful Cases by Dr. C. B. Morton; Chest Tumor by Dr. E. C. Drash; Appendix Abscess—Conservative Treatment by Dr. W. H. Parker; Multiple Stones in Common Bile Duct by Dr. W. R. Hill; Annular Pancreas by Dr. E. P. Lehman; Non-Rotation of Colon—Operative Rotation by Dr. C. B. Morton; Actinomycosis of the Stomach by Dr. W. H. Parker; and Developmental Anomalies by Dr. H. E. Jordan. The morning program included also a paper by Drs. E. P. Lehman and Floyd Boys on Experiments with Heparin and one by Dr. S. W. Britton on The Influence of Extracts of the Pituitary Gland and Adrenal Cortex on Water Balance. At the afternoon session the following program was presented: Dr. Alfred Chanutin spoke on Studies on Calcium Metabolism with the Aid of the Ultracentrifuge; Drs. G. M. Lawson and E. P. Lehman presented a paper on Clinical Experience with Sulfanilylguanidine; Dr. E. M. Landis discussed Pressor Activity of Extracts of Human Kidney in Relationship to Hypertension; Dr. W. W. Waddell, Jr., spoke on Clinical Studies on Vitamin K; and Dr. G. C. Ham discussed Studies on Anti-diuretic Substances in the Urine of Patients with Toxemias of Pregnancy. The meeting was continued at the Medical College of Virginia in Richmond on April 4th and 5th.

The twenty-seventh Post-Graduate Clinic sponsored by the University of Virginia Medical School and the Division of Extension was held on April 11th. The following program was presented: Sulfonamide Compounds in Medicine by Dr. J. E. Beckwith; Sulfonamide Compounds in Surgery by Dr. W. H. Parker; Fluid Balance by Dr. Staige D. Blackford; Administration of Fluids by Dr. W. R. Hill; Digitalis Therapy by Dr. J. Edwin Wood, Jr., and Dr. John Hortenstine. Diuretics by Dr. E. M. Landis; Treatment of Deficiency States by Dr. H. B. Mulholland; Treatment of Anemias by Dr. Byrd Leavell; The Female Sex Hormones by Dr. Tiffany J. Williams; and The Male Sex Hormones by Dr. Samuel Vest. Eighty-two physicians attended the Clinic.

The third Alpha Omega Alpha Lecture was presented

the natural resistance to delivery; 2) where the resistance of the birth canal offers a serious mechanical obstacle; 3) where faulty presentation or excessive development of the fetus retards or prevents delivery; 4) where accidental complications interfere with the normal progress of labor, and 5) we are most likely to encounter dystocia as the result of several contributing factors.

Labor should be induced for assured postmaturity. Fluids, glucose, supportive treatment, hypnotics and sedatives are valuable for inertia and exhaustion. Manual manipulations to correct faulty presentations are indicated before any attempts at instrumentation. Forceps delivery, with the occiput remaining posterior in the narrow pelvis, performed gently on proper grounds, will also solve a large fraction of these problems.

The majority of instances of dystocia can be intelligently and adequately handled in the home or isolated place.

A small fraction of the more severe grades of dystocia need hospitalization for abdominal delivery.

Classical section, if used at all, should be reserved for the elective case before the onset of labor.

Low cervical section or laparotrachelotomy may be used after a good test of labor, but should not be relied upon to protect the neglected dystocia from peritonitis.

The difficulties and poor results of destructive operations on the fetus often make the radical Porro section the procedure of choice for the neglected case.

TRI-STATE—From Page 281

give us the benefit of his knowledge and his experience. This man has been honored by all of his colleagues in the American Medical Association and elsewhere and he comes to us tonight to give us a real message, from a real American, a genial Irishman, a competent and finished surgeon. It is my great pleasure to present to you Dr. H. Winnett Orr, who will speak to us on "The Present Status of Chemotherapy in the Treatment of Infected Wounds and Septicemia." Members of the Association, it is my pleasure and privilege to present Dr. Orr, of Lincoln, Nebraska. (Applause.)

(Dr. Orr's address appears in this issue of the Association's journal.)

ANTHRAX—Three cases in Wisconsin (*Wis. Med. J.*, Feb.) all contracted from handling diseased carcasses.

INTRACTABLE PAIN—When the cause can not be removed, think of cobra venom.

ENCEPHALITIS may occur as a complication of mumps.

on April 11th by Dr. Homer W. Smith, Professor of Physiology at the New York University College of Medicine. Dr. Smith spoke on The Quantitative Study of Renal Function.

MEDAL FOR MacNIDER (Chapel Hill, N. C.)

The Kober Medal, one of the most coveted of all the distinctions to be won in the domain of medical science, has been awarded to Dr. William deB. MacNider.

Dr. Alfred Newton Richards, vice-president for medical affairs of the University of Pennsylvania, made the presentation at a session of the recent convention of the Association of American Physicians at Atlantic City. Dr. Richards is an old friend of Dr. MacNider's and has come here to visit him several times.

The late Dr. Kober, an eminent physician and medical investigator long associated with George Washington University, established the medal by a bequest to the American College of Physicians. Under the terms of the bequest, the award was to be made, from time to time, for an important achievement in medical research. It was awarded to Dr. MacNider for his researches in Bright's disease and in tissue resistance.

Dr. C. L. WALTON, Glen Alpine, was elected President of the Burke County Medical Society at its meeting at Morganton on April 15th. Dr. John S. McKee, of the staff of the State Hospital, was elected Vice-President and Dr. Edith Goodwin Barbour, Secretary-Treasurer. Dr. James W. Vernon was named delegate to the State Medical Society.

Dr. George W. Morse, for more than a year a member of the Staff of the Davis Hospital, Statesville, has gone to Pensacola, Florida, to engage in private practice.

MEDICAL COLLEGE OF VIRGINIA

The annual Stuart McGuire Lectures and spring postgraduate clinics were held April 24th and 25th. Dr. Alfred Blalock of Vanderbilt University gave the McGuire lectures, the first on Pathogenesis of Shock and the second on Prevention and Treatment of Shock. Speakers on the postgraduate clinic program were: Dr. L. R. Broster, Senior Surgeon to Charing Cross Hospital, London, speaking on Recent Developments in the Treatment of War Wounds; Lieutenant Colonel David N. W. Grant, Chief Medical Division, United States Army Air Corps, Medical Division, Occupational Fatigue as Manifested in Flying Personnel; Dr. Henry K. Beecher, Chief, Department of Anesthesia, Massachusetts General Hospital, Clinical Aspects of Anesthesia and Shock; Dr. C. C. Coleman, Professor of Neurological Surgery of the college, Penetrating Wounds of the Brain, and Dr. Harry J. Warthen, Associate Professor of Surgery, Gas Bacillus Infection.

Mr. George W. Bakeman, who has been in charge of the Paris office of the Rockefeller Foundation for a number of years, has been appointed Assistant to President Sanger.

The annual lectureship sponsored by Psi Omega dental fraternity was given at the Simon Baruch Auditorium on May 5th by Dr. William J. Gies. Doctor Gies' topic was Medicine and Dentistry in Health Service.

Dr. Alton D. Brashear, Assistant Professor of Anatomy, has been made a member of the supreme council of Psi Omega fraternity.

The ex-internes of the Hospital Division of the college held their annual reunion on April 23rd. The program for the reunion included clinical-pathological conferences as well as the postgraduate clinics and the McGuire Lecture program. A tour of the new hospital, a smoker, and a banquet concluded the day's activities.

Alpha Epsilon Iota, woman's medical fraternity, sponsored



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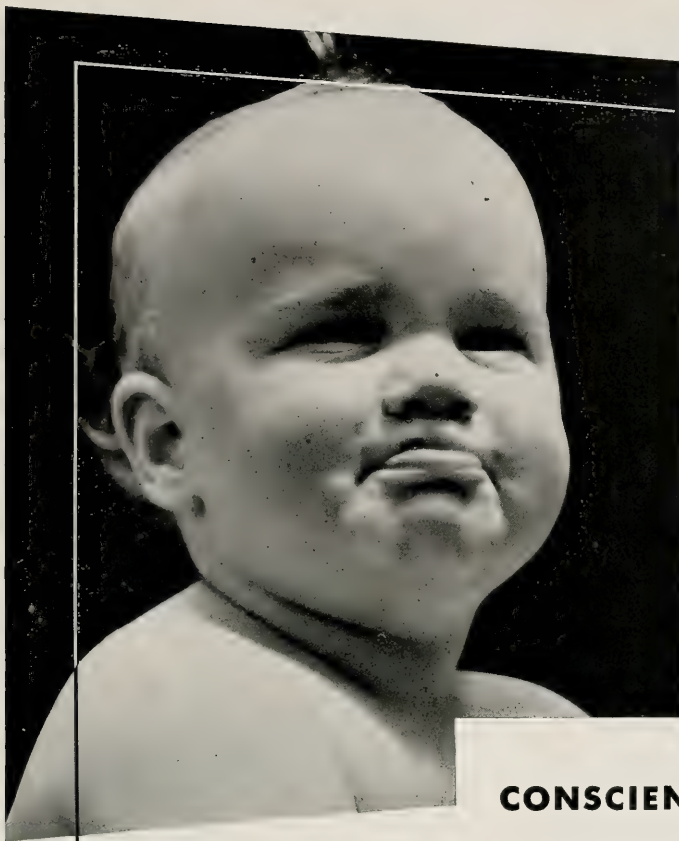
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sored a lectureship on April 18th by Dr. Josephine Neal, Clinical Professor of Neurology of the College of Physicians and Surgeons, Columbia University. Doctor Neal spoke on Acute Encephalitis with Special Reference to Infectious Diseases.

On April 3rd the college was host to the Fifteenth Annual Convention of the Southern Society of Clinical Surgeons. Following operative clinics in the morning the group made a trip to Williamsburg in the afternoon. Dr. Randolph H. Hoge, Assistant Professor of Anatomy and Surgery at the college, was elected to membership in the Society at its meeting here.

Dr. H. Hudnall Ware, Jr., Associate Professor of Obstetrics, recently addressed the Fredericksburg Medical Society on Ectopic Pregnancy.

The college was host to the Virginia Academy of Science May 1st-3rd for its annual meeting. A splendid program was rendered.

The Society of Neurological Surgeons also met at the college May 1st-3rd for operative clinics and program of lectures.

MARRIED

Howard McDowell McCue and Carolyn Moore, of Richmond, were married on April 5. Both are members of the graduating class in medicine of the Medical College of Virginia.

Dr. Charles Russell Robins, Jr., and Miss Susan Clay, both of Richmond, were married on April 19th.

DEATHS

Dr. Harry Barton Hinchman, (Medical College of Virginia, 1916) died April 5th. of an acute heart attack

at his home at Richmond. During his young manhood Dr. Hinchman was prominent in Richmond athletic circles and at one time was a pitcher on the old Church Hill baseball team. He was a member of the Richmond Gun Club. He was a staff physician at the Virginia Hospital here during and immediately after the World War. He was a member of the Richmond Academy of medicine, the Richmond Kiwanis Club, the Country Club of Virginia and of the Knights of Columbus.

Dr. Aurelius R. Shands, died April 27th at his home at Washington of heart trouble.

He was born at Petersburg, Va., November 5th, 1886, graduated from University School there in 1880, and received a Doctor of Medicine degree from the University of Maryland in 1884. He became Professor of Orthopedic Surgery at Columbian University, now George Washington University, in 1894, and later was professor emeritus.

Dr. Shands was a member of the American Orthopedic Association, of which he was president in 1912, the Southern Surgical Association, the Virginia State Medical Society and the Washington Academy of Science.

Among the survivors is a son, Dr. A. R. Shands, Jr., who was the first Professor of Orthopedic Surgery in the Duke University, Medical School, and is now the head of the Orthopedic Foundation established by the DuPonts at Wilmington, Delaware.

Dr. Charles K. Kernan, one-time physician to the Southwestern State Hospital, Marion, Va., died at a Marion hospital April 18th, at the age of 73. He had practiced many years in Pulaski County and the City of Bristol.

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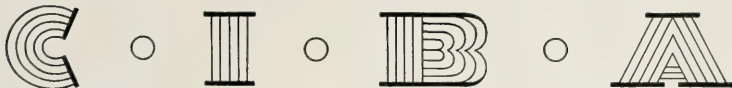


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BOOKS



HEALTH AND LONGEVITY, by CHARLES M. BAIRD. *Christopher Publishing House*, Boston. 1941. \$1.75.

On one side of a flyleaf is a passage of scripture which says man's days shall be a hundred and twenty years. On the other is the statement that most deaths in the United States are preventable. Plain nonsense. Mr. Baird might have found another passage of scripture which says the days of a man's years are three-score years and ten. Mr. Baird ought to be able to find employment under Bernaar Macfadyen.

HEALTH: Mental, Moral and Physical, by HORACE WENDELL SOPER, M.D., F.A.C.P. *The Christopher Publishing House*, Boston. 1941. \$1.50.

Chapter heads are: St. Louis; Exercise; Sleep; Tobacco; Alcohol; The Prevention of Colds, Grippe and Flu; Constipation and Diarrhea; Malnutrition; Milk; Shaving; First Aid in Emergencies; The Weather; The Old and the New Deal; Degeneration; Uncle Sam—Sentimentalist; Robert G. Ingersoll, 1833-99; Dr. R. Walter Mills, 1877-1924; Longevity; Immortality; Health Paragraphs.

The anecdotes in the first chapter bring to mind the saying that the old ones are the best. If the Georgia doctor who moved to Saint Louis said "You all" in referring to one person he learned to do so after he left Georgia.

The dealing with exercise, sleep and tobacco is rational. That the distillation of pure whiskey is a complicated process is news, indeed. On catching cold, constipation, diet, especially milk-consumption, and first-aid the author has things to say that provoke thought. The author drags in by a hind leg his idea that Uncle Sam should "have sense enough" to stay out of the present war. The health paragraphs are largely homilies generally accepted.

PHYSICAL MEDICINE: The Employment of Physical Agents for Diagnosis and Therapy, by FRANK H. KRUSEN, M.D., F.A.C.P., Associate Professor of Physical Medicine, the Mayo Foundation, University of Minnesota. With 351 illustrations. *W. B. Saunders Co.*, Philadelphia and London. 1941. \$10.00.

The plan of the book is to deal with each physical agent made use of under these headings: Introduction — definition — development — present status; Physics; Source, device or method of production; Physiologic effects; Technic of application; Indications—Contraindications: dangers and limitations; Conclusions.

History of physical therapy is outlined. Heat and cold, locally and generally; light; electricity of various forms; water, hot and cold; massage, exercise, with and without mechanical devices; rest and relaxation; special applications of physical therapy to certain disease conditions—all these matters are covered thoroughly.

A much-needed book on a subject neglected now because it was over-enthusiastically advocated a few years ago. This authoritative exposition of the value of physical agents and of the techniques of their exhibition will go far toward gaining for these agents the place to which their merits entitle them.

A FAMILY DOCTOR'S NOTEBOOK, by I. J. WOLF, M.D., Professor of Medicine, Emeritus, The University of Kansas School of Medicine. *Fortuny's*, New York City. 1940.

The author is a product of the German universities at their best. The contrast between the Kansas City of 1888 and the old university cities of Germany was such as to prove discouraging.

The author says he has written this book as a family physician who after fifty years of practice, still counts among his patients and intimate friends a great many who sought his help fifty years ago. He says to point out advantages and disadvantages crept into the practice of medicine, and to suggest of specialism and the many abuses which have a remedy for them will be a part of his story.

His account of how he was educated; how he established a practice; what happened to his investments; his writings, lay and professional; his ideas on medical ethics, various types of physicians and patients, modern trends, high cost of doctoring, birth control, fads and fallacies, family physician and specialist, the physician and religion—all these and other matters make this book one well worth attentive reading.

Few doctors will agree with all that Dr. Wolf thinks and says. Any doctor will find in his book much of instruction and entertainment.

The peddler knocked at the door and started his sales talk with the statement, "I'm out scratching for a living." "Sorry, but I don't ich," vowed the woman of the house as she slammed the door.

• 1941 •

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"GONOCOCCAL INFECTION IN THE MALE" by A. L. Wolbarst, M. D., Fellow, American Urological Association; Second edition, completely revised and enlarged. 140 illustrations. 7 colored plates. Published at \$5.50 by C. V. Mosby Co.; remainder copies at \$1.00 each while they last. Send no money. Pay Postman on delivery. MEDICAL BOOKS, ROOM 1808, at 1440 Broadway, New York City.

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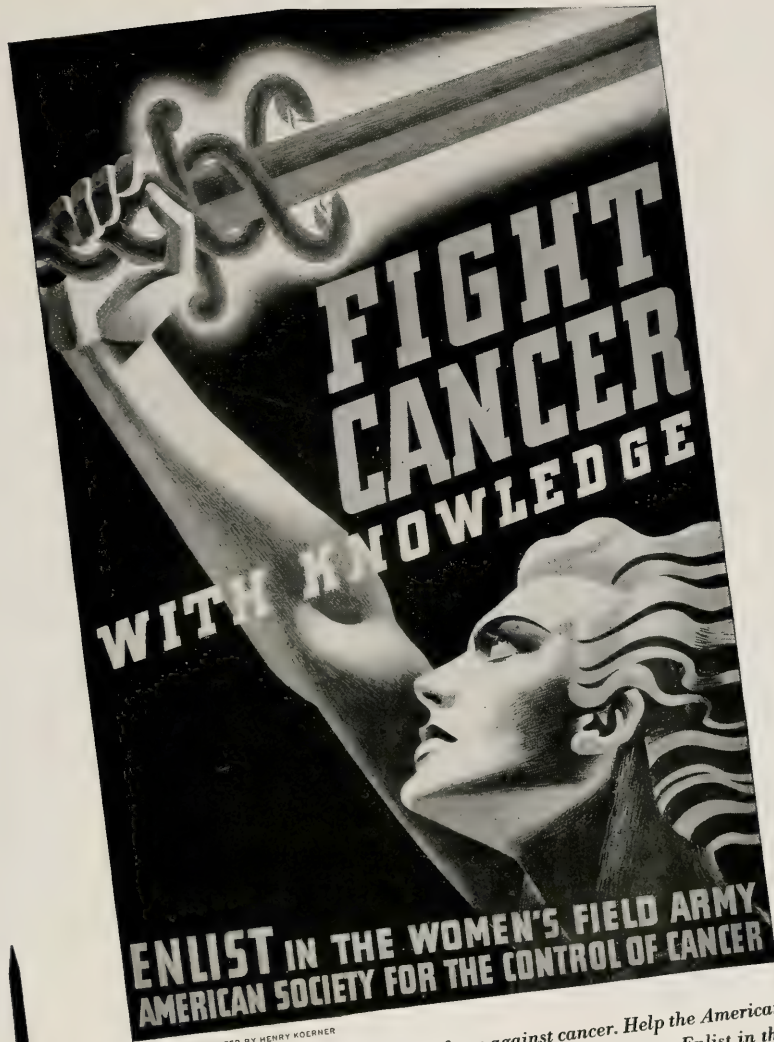
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JAMES M. NORTHINGTON, M. D., Editor

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Address*

The Background and Treatment of Hypertensive Disease

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THE PROBLEM of the causation and treatment of hypertensive disease should be considered as one of the major challenges to the medical profession. When it is considered that four times as many deaths result from the effects of hypertension as from cancer and that approximately a fourth of all deaths of persons past fifty years of age are due to the effects of hypertensive disease, the importance of this problem is evident. Time will not permit me to discuss in detail all the various aspects of the causation and pathogenesis of hypertensive disease. The chairman of your program committee has asked me to talk about a phase of the problem in which I have been especially interested; that is, the inherent factors concerned in the development of hypertension or, to use a more general phrase, the background of hypertensive disease. In addition, I shall discuss some of the practical aspects of the treatment of hypertensive disease.

Much information concerning the development of hypertension is becoming available in hospitals and clinics in which careful records are kept, in the making of annual physical examinations for insurance purposes and in the records of large organizations in which annual physical examinations are required of personnel. Study of these records is leading to a better understanding of the range of normal blood pressure and to the realization that hypertensive disease begins much earlier in

life than has been suspected.

A study of the blood pressure and history of many patients for a period of ten years and a study of the records of many patients who have been followed at the Mayo Clinic for twenty to thirty years have convinced me that there is a definite background on which hypertension develops and that without this background the clinical picture of essential hypertension usually does not develop, regardless of what disease or pathologic change the patient may acquire. I believe that such inherent factors as are concerned in the development of hypertension can be recognized when the condition is in the prehypertensive stage. Furthermore, I believe these factors must have some etiologic relationship to the hypertension which eventually develops.

CHARACTERISTICS OF THE BACKGROUND OF HYPERTENSIVE DISEASE

The hereditary factor.—There is little doubt that heredity plays an important role in the background of hypertensive disease. Janeway¹ in 1916 expressed the opinion that "The belief in an inherited quality of the arterial tissues with a tendency to premature death from apoplexy, angina pectoris, or other local manifestation, is too firmly grounded in clinical observation to be without basis. Hypertensive arterial disease must be looked on today as the type in which heredity plays the largest role." Subsequent investigations have amply confirmed

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this opinion. The most significant data in regard to this problem concern the incidence of hypertensive cardiovascular disease among relatives of persons who have hypertension as compared with a similar incidence among relatives of persons who have a normal blood pressure. O'Hare, Walker and Vickers² found that 68 per cent of 300 patients who had hypertension gave a family history of cardiovascular disease as compared with 37 per cent of 564 patients not suffering from hypertension who gave such a history. I have found a family history of hypertensive cardiovascular disease to be five times as frequent among persons who have hypertension or who are hyperreactors to a standard stimulus test³ (cold pressor test) than it is among persons who react normally to the test. I have also found, in a follow-up study of a group of 1374 patients, that the incidence of subsequent hypertension was approximately six times greater among those with a family history of hypertensive cardiovascular disease on the original visit as it was among those who did not have such a family history.⁴ Measurement of the blood pressure of relatives by Weitz,⁵ Ayman⁶ and others has shown that there is a significantly higher incidence of elevated blood pressure among relatives of persons who had hypertension than among relatives of persons who did not have hypertension.

Personality.—The most evident characteristic of a person suffering from essential hypertension is a certain type of personality. The majority of patients who have essential hypertension are dynamic, hard-driving, non-procrastinating persons with the desire and ability to accomplish much in a short period. Careful questioning of the patient and his relatives will reveal the fact that this type of personality has not developed since the patient acquired hypertension, but that it represents the patient's natural tendencies and has been characteristic of the patient as far back as can be remembered. The occurrence of migraine in the history of patients who have essential hypertension is significant. Migraine, or a history of previous migraine, occurs approximately five times as often among patients suffering from hypertension as it does among nonhypertensive persons of corresponding ages. The unusual concurrence of these two diseases probably is due to inherent factors, particularly those of personality and heredity which are common to both diseases.

Vascular hyperreactivity.—The chief objective feature of the background of hypertensive disease is a disturbed physiology which I have called vascular hyperreactivity.⁷ This vascular hyperreactivity is manifested by marked variability of the blood pressure and by hyperreactive response of the blood pressure to a variety of, or perhaps to all, forms of stimulation. Vascular hyperreactivity

may be estimated by determination of the range of blood pressure at hourly or half-hourly intervals for twenty-four to forty-eight hours, during periods in which the patient is active and during periods of rest. Another less time-consuming method is the performance of a test by which the reaction of the blood pressure to a standard stimulus is measured after a basal level of blood pressure has been obtained. The cold pressor test is a satisfactory method for such a determination. The technic of this test is as follows: The patient is allowed to rest in a supine position in a quiet room for twenty to sixty minutes. Twenty minutes is a satisfactory rest period for persons who have normal blood pressure. Several readings of blood pressure are taken until a basal level has been approximated. If hypertension is present, a longer period of rest may be necessary to establish a basal level. The blood pressure of a few patients who have severe essential hypertension will remain at fixed high values and a basal level cannot be secured even after several hours' rest. With the patient still supine, and with the cuff of the sphygmomanometer on one arm the opposite hand is immersed in ice water (4° C. or 39.2° F.) to a point just above the wrist. With the hand still in the water, readings of the blood pressure are taken at the end of thirty and of sixty seconds. The higher of the two readings obtained while the patient's hand is in the ice water is taken as an index of the response. The hand is removed from the ice water as soon as the reading made at the end of sixty seconds has been obtained and readings are taken every two minutes thereafter until the blood pressure returns to its previous basal level. As to the question of what constitutes a significant response, analysis of the results of a large number of tests has determined that an elevation above the basal level of more than 20 mm. of mercury in the systolic pressure and of more than 15 mm. of mercury in the diastolic pressure indicate a hyperreactive type of response to the test. If the maximal value obtained is more than 140 mm. of mercury, systolic, and 90 mm. of mercury, diastolic, the patient is even more certain to have a hyperreactive vasoconstrictor mechanism.

Vascular hyperreactivity, as measured by the cold pressor test, is present to some degree in all cases of essential hypertension. Vascular hyperreactivity is present in some persons who do not have hypertension. In studying a group of control persons I was surprised to find that approximately 15 to 20 per cent of young persons, who did not have hypertensive disease, gave hyperreactive responses to the cold pressor test. Furthermore, as already stated, it was found that among these hyperreacting normal persons there was a higher incidence of family histories of hypertension than

there was among the hyporeacting persons. Further study of the blood pressure reactions of a large number of families leads to the conclusion that the degree of vascular hyperreactivity probably is governed by genetic factors. These observations indicate that vascular hyperreactivity among persons who do not have hypertension represents an antecedent or latent phase of essential hypertension. In further support of this theory there is evidence that hypertension is more likely to develop among persons with a usually normal blood pressure who hyperreact to the cold pressor test than it is to develop among persons who hyporeact to such a test.⁷

Persons who hyperreact to the cold pressor test also hyperreact to other forms of stimuli; for instance, they hyperreact to the experience of coming into the physician's office for the first time to have their blood pressure taken. Sometimes this first reading of blood pressure, if it is slightly elevated, is discarded by the examining physician. The possible significance of the fact that only certain patients will have an elevation of the blood pressure under such circumstances has been largely overlooked. Actually, this particular reading of blood pressure represents a kind of psychic pressor test. I have made use of this psychic reaction in obtaining additional information as to the possible significance of vascular hyperreactivity among persons who have usually normal blood pressure by studying the records of patients who had returned to the Mayo Clinic ten to twenty years after an original examination and by correlating data concerning the subsequent development of hypertension with the original readings of blood pressure of such patients. In this study it was found that the majority (70.4 per cent) of the patients who as a result of nervous stress had an original elevation in systolic and diastolic blood pressure into the upper ranges of normal (140 to 150 mm. of mercury, systolic, and 85 to 100 mm. of mercury, diastolic) had hypertension ten or twenty years later, whereas only a small number (3.4 per cent) for whom the original reading of blood pressure had been in the lower ranges of normal had hypertension ten or twenty years later. To state this in a different way, of 206 patients who recently had hypertension, 86 per cent had given evidence of vascular hyperreactivity ten or twenty years previously, although they did not have hypertension at that time and although the majority did not have hypertension until a number of years had elapsed since the original examination.

The renal factor.—I have not time to discuss in detail the possible significance and clinical application of the important contributions of Goldblatt⁸ and others who have produced hypertension exper-

imentally by constriction of the renal circulation. I would, however, urge caution in acceptance of the theory that renal ischemia is the solution to the causation of hypertension in the majority of cases. Particularly should caution be exercised in attributing a primary etiologic role to a renal lesion solely because it is found to be present in a patient who has hypertension. Because of the revival of interest in a possible renal mechanism in essential hypertension, Lander and I have made a follow-up study⁹ in regard to heredity and vascular hyperreactivity in a group of 264 patients suffering from various renal and urologic diseases who did not have hypertension on their original visit to the Mayo Clinic and who had returned to the clinic for examination fifteen to twenty years after their original visits. The results of this study show that those patients who had a high normal blood pressure (evidence of vascular hyperreactivity) on their original visits and those who had a family history of hypertension were four to five times as likely to have hypertension subsequently as were those who had a low normal blood pressure or no family history of hypertension, regardless of the type or extent of the urologic or renal lesion and regardless of whether the onset of symptoms of the disease of the urinary tract occurred before or after the original reading of blood pressure. Results of this study indicated that factors concerning the development of hypertension which are inherent in each person may be of equal importance in the development of hypertension regardless of whether renal disease is present or is not present. It is probable that in those cases in which a renal pressor mechanism may be operating this mechanism is initiated by vascular changes resulting from the inherent vascular hyperactivity.

TREATMENT

There is no specific treatment for hypertensive disease. It is a mistake to speak at present of curing a patient of essential hypertension. Some procedures and treatments may relieve and lower blood pressure, but it is doubtful whether anything done at present cures any patient of his inherent hypertensive tendency. The treatment of hypertensive disease should begin in the prehypertensive stage, when regulation of the patient's methods of living so as to conserve the vascular system from strain may pay large future dividends. However, most patients suffering from hypertensive disease do not come to the physician for treatment until the disease is moderately advanced. When the physician is faced with a patient suffering from hypertensive disease, it is obligatory that he first make a reasonable effort to rule out secondary factors which may contribute to the hypertension before deciding on a program of treatment. If such factors are found,

they should be removed or treated whenever there is a reasonable expectation of benefit to the patient to be derived from such a course. This rarely can be accomplished to any spectacular extent, except in cases of pheochromocytoma and in rare cases of unilateral renal disease. During the past three years there have been several reports in the literature concerning patients who had unilateral renal disease and hypertension and who, after surgical removal of a diseased kidney, experienced a return of the blood pressure to normal.¹⁰ However, all patients have not experienced relief of hypertension after removal of a diseased kidney. At present the evidence suggests that only those patients who suffer from unilateral atrophic pyelonephritis can reasonably expect regression of their hypertension to follow nephrectomy. In spite of a careful search for significant secondary factors, the majority of instances of hypertension will be found to be of the essential type. If the possibility is borne in mind of a specific cause for elevation of the blood pressure, it is not likely that any important secondary factors will be overlooked.

The medical treatment of hypertension is not satisfactory. The spontaneous variability of the blood pressure makes estimation of the real value of various types of therapy extremely difficult. In the planning of a logical program of treatment the background of hypertensive disease should not be ignored. The hereditary factor cannot be eliminated, although it may be conjectured that the breeding of a race of hyporeactors, so to speak, might eliminate hypertensive disease. An effort can be made to reduce the strain on the vascular system by teaching the patient to relax. This must be approached first by helping the patient to understand his problem and by doing whatever is possible to relieve undue anxiety. Most patients suffering from hypertension have an undue fear that some disaster is about to overtake them, an attitude which unfortunately in some instances has been caused by unwise remarks on the part of some physician. The patient suffering from hypertension should have a regulated program which is conducive to relaxation, consisting of regular periods for rest during the day, regular vacations and, above all, a hobby of a noncompetitive type. Tobacco should be used sparingly, or, better still, avoided entirely. Sedative drugs frequently are of value in the allaying of undue nervous tension. The hyperreactive nature of the person who has hypertension usually necessitates relatively larger doses of sedative drugs to produce the desired effects. Better results than those formerly obtained have been reported to follow the use of thiocyanates, and the administration of thiocyanates has been made safer since a method has become available for determination of their concentration in

the blood. As Barker¹¹ has pointed out, the important feature of this type of therapy is establishment of a definite concentration—between 6 and 12 mg. per 100 c.c.—in the blood. If it is less than 6 mg., very little effect is noticeable, and if it is greater than 14 mg., there is danger of the occurrence of serious toxic effects. There is a wide individual variation in a patient's tolerance of thiocyanates and elimination of thiocyanates from the blood stream; consequently, the dosage must be determined individually. A test of the content of thiocyanates in the blood should be made at least once a week until a stable dosage has been determined, after which once a month usually is often enough. Headache, nervous tension and insomnia may be relieved by thiocyanate therapy. In some instances weakness and fatigue may be increased temporarily and in an occasional instance enlargement of the thyroid gland may occur. Symptoms of intoxication, such as increasing nervousness, dermatitis, nausea and vomiting and mental confusion, should be watched for carefully, but they are unlikely to occur if the thiocyanate content of the blood is kept below 15 mg.

There is little evidence that special diets are of much value in reducing blood pressure. Restriction of the intake of sodium chloride has been advocated by Allen¹² and others. In my experience, there has been little difference noted between the effect of a salt-free diet on the blood pressure and the effect of a diet in which the sodium chloride is only moderately restricted. Certainly, patients suffering from hypertensive disease should not be maintained for an indefinite time on a diet in which salt or protein is greatly restricted, unless an adequately controlled period of observation has demonstrated significant lowering of blood pressure while the patient followed such a program of treatment. The use of special diets in the management of hypertensive disease has been abandoned by most students of hypertension, except for patients who are obese or who have renal failure.

Various types of operations on the sympathetic nervous system have been devised for the treatment of essential hypertension. At the Mayo Clinic the operation of choice is section of the major, minor and lesser splanchnic nerves, with partial resection of the celiac, and resection of the upper lumbar sympathetic, ganglions. Approximately 450 patients have been subjected to this operation at the Mayo Clinic during the six years prior to the time of this report without a post-operative death. According to a recent summary by Allen and Adson,¹³ excellent results in reduction of blood pressure have been obtained by this operative procedure in approximately 13 per cent of cases and results have been fair in 18 per cent. In 30 per cent of cases the blood pressure was not

affected, and in 39 per cent good immediate results were obtained which lasted for weeks or months, but return of blood pressure to preoperative levels occurred. The symptoms had been relieved in approximately 80 per cent of cases, regardless of the effect on the blood pressure. Sympathectomy is not the answer to the quest for a specific treatment for hypertension, but because of the small risk involved and the number of excellent results obtained by the operation, it is a worthwhile procedure in certain carefully selected cases. At present, patients are selected for sympathectomy at the Mayo Clinic according to the following criteria: Operation is advised only for patients whose blood pressure responds satisfactorily before operation to the following standard tests: (1) slow and intermittent intravenous injection of a 5 per cent solution of pentothal sodium to a stage at which decrease in the blood pressure no longer occurs (ordinarily 500 mg. to 1 gm. is injected), (2) administration of 3 grains (0.2 gm.) of sodium amytal each hour for three successive hours; (3) administration of $\frac{1}{2}$ grain (0.032 gm.) of sodium nitrite at half-hour intervals until six doses have been given, and (4) hourly determination of blood pressure during rest and sleep for a minimum of twenty-four consecutive hours.

If the blood pressure decreases to normal or to nearly normal as a result of all these measures, the patient may be considered a satisfactory candidate for operation. If the response of the blood pressure to these measures is inadequate, the results of operation are almost certain to be unsatisfactory; and even when the response is adequate the benefit from operation may not be all that was hoped for. The problem of the selection of patients for operation is further complicated by the neurosurgeon's desire to perform the operation before the blood pressure becomes relatively fixed at high values, also by his desire not to operate on persons who have a relatively mild and nonprogressive form of hypertensive disease. In addition to the unfavorable response of the blood pressure, contraindications for operation are as follows: age greater than fifty years, congestive heart failure, angina pectoris, marked renal insufficiency and advanced arteriosclerosis. Spasm and apparent sclerosis of the retinal arteries, retinitis, moderate enlargement of the heart, inversion of *T* waves in the electrocardiogram, albuminuria and slight reduction in renal function or a cerebrovascular accident from which recovery has been satisfactory are not in themselves contraindications to operation.

The use of renal extracts in the treatment of hypertension aroused considerable interest after the reports of Grollman, Williams and Harrison¹¹ and of Page¹⁵ and his co-workers. It is to be hoped

that future developments in this field of therapy may provide the long-desired specific remedy for the control of hypertensive disease. However, at present this work must be considered to be in an experimental stage. Apparently, the extract is difficult to prepare in uniform potency and the expense involved in the obtaining of even a small amount of it precludes its use in any general way.

SUMMARY AND CONCLUSIONS

Hypertensive forebears, a dynamic personality, a tendency to migraine, and vascular hyperreactivity are the characteristic features of the background of hypertensive disease. Vascular hyperreactivity is characteristic of the prehypertensive stage of essential hypertension and it may be the genetic defect which is inherited. To this prehypertensive background of vascular hyperreactivity may be added secondary or accelerating factors, or the vascular hyperreactivity may of itself produce changes in certain organs (the kidneys for instance), which bring into play a secondary pressor mechanism, still further elevating the blood pressure.

The mechanism of the production of vascular hyperreactivity is not well understood. It is probably related to an inherited hyperreactive vasomotor center, although peripheral mechanisms for the production of vasoconstriction may play a part.

There is no specific treatment for hypertensive disease. Whenever possible, attempts at control should be started in the prehypertensive stage of the disease. A reasonable effort should be made to recognize significant secondary and contributing factors affecting the blood pressure before a program of treatment is decided on. Regulation of methods of work and recreation should receive considerable attention and undue emphasis on readings of blood pressure should be avoided. Drug therapy usually is entirely ineffective in lowering blood pressure significantly. In certain cases the sedative drugs and thiocyanate therapy under properly controlled usage may be effective in relieving symptoms and lowering blood pressure. Special dietary measures are of limited value. Sympathectomy is a worthwhile procedure in certain carefully selected cases. The possible effectiveness of renal extracts in the control of hypertension has aroused considerable interest but such treatment is as yet in an experimental stage.

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DR. EDWARD A. BABER, A POWER IN GEORGIA. AND HIS TRAGIC END

(J. D. Baxemore, in *Il. Med. Assn. Ga.*, April)

Edward Ambrose Baber, Macon's first doctor, was born in Buckingham County, Virginia, Sept. 12th, 1793. Forced to seek a milder climate after being injured in the Battle of Bladensburg during the War of 1812, he removed to Georgia.

Just as he had established himself General Jackson asked that he join his staff as surgeon on his invasion of Spanish territory in Florida. After the Seminole campaign he returned to Georgia. Soon he was asked to give his advice to a group of commissioners who wanted to lay out a new town to be named for Nathaniel Macon. He admonished the commissioners not to lay the town off near the river, but as far from the swamps as was possible.

Dr. Baber founded the Masonic Lodge, the Academy, was first president of the first bank, organized the first Church, made plans for first court house (in 1827). He conceived the idea of a railroad to connect Macon with the sea, and thereafter was known as the "Father of the Central Railroad of Georgia." He started the first library, organized the first military company and was commissioned its first captain. Now, a member of the Legislature, he introduced a bill authorizing the Governor to appoint "three suitable persons to form a system of academic and free school education throughout the State."

On the day of his marriage to Miss Mary Sweet, June 16th, 1829, she was pronounced in the last stages of tuberculosis. He believed he could cure his bride with proper diet, rest, fresh air, travel and life in the open in a favorable climate. She outlived him by 48 years. As Mrs. Baber often said, "He married me only to turn me out of doors."

On Sunday, March 8th, 1846, when only 49 years of age, in the sick room of a patient, a dose of cyanide of potassium compounded by Majendie's recipe, as published in the Seventh Edition of Ellis' Formulary, swallowed to convince the patient (whose suspicions of its improper strength had been aroused by the apothecary) that it might be taken with impunity, terminated the life of Dr. Baber. The day was officially recorded as Macon's Dark Sunday. The formulary contained a typographical error and that whole edition, as soon as possible, was recalled by the government and burned.

ACUTE PORPHYRIA

(W. H. Ford & H. L. Ulrich, Minneapolis, in *Minn. Med.*, April)

Porphyria is not an extremely rare disease, but the diagnosis may be missed even after careful study and autopsy. Three cases have been found in Minneapolis in the last five months. The diagnosis in our case was made only because of the red urine, which showed the typical spectroscopic bands of porphyrin.

Waldenström has reviewed the chemical and clinical studies of 100 cases of porphyria.

The condition must be differentiated from neuroses, psychoses, encephalitis, multiple neuritis, Landry's paralysis, periarteritis nodosa. The commonest confusion occurs in acute abdominal symptoms, particularly where there is pain, fever, constipation, vomiting and leukocytosis. He records 29 patients undergoing abdominal operation, the mistaken diagnosis being appendicitis in 16, ileus in 7, pelvic conditions in 4, cholecystitis in 2. Gastric or duodenal ulcers have also been erroneously diagnosed. He has never been able to find porphyrin in the urine in any other disease.

The therapy, which is more or less futile, consists of diuretics, alkalis, morphine or papaverine in the vein, calcium and heat. Sedatives, particularly bromides, should be avoided.

In full-blown cases, 80% are fatal. The recurrent abdominal type is much less dangerous.

Of 100 cases, 20 died within one year from the appearance of the symptoms of the disease. Only two lived eight years. Of 12 known living cases, one has gone on for 27 years.

In all cases with acute abdominal symptoms, and in cases which present puzzling neurological data, think of porphyria.

IMMUNIZATION AGAINST TETANUS

(H. J. Parish, in *Proc. Royal Soc. of Med.* (Eng.), Mar.)

The incidence of tetanus in this war has been negligible. In no case has tetanus been reported in wounded soldiers who had received protective inoculations of toxoid. Although active immunization may be indicated for A. R. P. workers, members of the Land Army, and others specially exposed to risk, mass immunization of the civilian population is not advised. This omission is not likely to have serious consequences provided that antitoxic serum can be given early to all wounded persons.

Many sore arms which are ascribed to the prophylactic are really due to bacterial infection; sterilize syringes and needles by heat. Far too many rely on alcohol as a disinfectant, although its unreliability is well-known.

Obesity: A Clinical Point of View

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OBESITY, an unwholesome physical state, must be accepted by physicians as a clinical condition which merits their serious attention. Its menace to continued good health while one is passing through successive decades of life has been demonstrated. The realization of this fact by an ever-increasing number of people is giving a greater opportunity for treatment.

Understanding of obesity as a clinical problem has been clouded by inaccurate thinking and unproven hypotheses. A correct attitude toward obesity and its treatment will result from the acceptance of the following facts.

1. Obesity can result only from a plus energy balance, from the ingestion of more energy units than are expended, from overeating. All obesity is, therefore, alimentary.

2. The cure of obesity can be accomplished only by the establishment of a negative energy balance, from expending more energy units than are taken in, thus oxidizing the stored fat.

3. The only practical way in which a negative energy balance can be created is by limitation of intake, by dieting.

4. The limited diet prescribed for the correction of obesity must contain an adequate amount of all the known essential foodstuffs. There need be no calories in the diet in addition to those afforded by the articles necessary to supply the essential foodstuffs.

5. Continued success with menus so limited demands from the patient a high grade of coöperation in accurate dieting. This is obtained only when he recognizes that the sensual delights of eating must be given up for the period of treatment.

I

An automatic regulation of energy intake to energy output is operative in most people much of the time. Its mechanism is not understood but it is surprisingly accurate. The wonder is that obesity is not more prevalent, since eating is such a pleasant occupation and delectable dishes are everywhere and at all times available. When the automatic regulation breaks down an abnormal state of nutrition results unless conscious attention is given the matter. Obesity follows if the breakdown yields a plus energy balance, because all intake in excess of needs is converted into and laid down as fat. Recovery from undernutrition is accompanied by the building up of vital tissues. There is, among other things, a storing of nitrogen¹ until normal

weight has been attained. In fully-developed normal adults, with the single exception of pregnancy, excess weight is never due to increased weight of vital tissues. The excess weight is all fat and its extent is a measure of the amount of food eaten in excess of needs.

Considerations of the causes of obesity are studies of the manner of, and reason for, the breakdown of the mechanism regulating energy intake and output. The breakdown can occur in two ways: lowered energy expenditure without a corresponding limitation of food intake; and increased food intake without a counterbalancing greater energy expenditure.

The milder grades of obesity insidiously developing as one grows older probably result from a breakdown in both directions. People as they grow older should, and most do, take less exercise and so need less energy-producing food. More spare time, and greater contentment lead to more eating. One must recognize, in addition to this, an endocrine factor especially noteworthy in some rapid weight increases after menopause. The ways in which various changes in endocrine function break down the energy intake-output balancing mechanism have not been explained. Certainly no metabolic anomaly has been shown such an increased tendency to convert glucose into fat, a diminished ability to burn either glucose or fat, or an altered specific dynamic action of the food eaten.²

When endocrine dysfunction and obesity are seen together the endocrine disorder suspected of causing disturbance of energy balance is not always primary. Irregularities of menstruation, often dependent upon endocrine imbalance, are very common in obese young women. The majority of these patients are relieved of their menstrual difficulties after attaining a normal weight by careful dieting. This suggests that overeating is the primary factor, that the endocrine dysfunction causing the dysmenorrhea results from the ingestion of a diet faulty as to metabolic requirements. This observation supplies a practical suggestion for direction of treatment.

The obesity sometimes seen in hypothyroid states is brought about probably by lowered energy expenditure; however, regardless of how low the energy output may be, or from whatever cause, a wholesome menu which does not exceed the caloric needs is available. Failure to adopt such a

menu, in other words overeating, is therefore the cause of the obesity in cases such as these, as it is under all other circumstances.

The more severe grades of obesity, especially in young people, are almost always initiated by an abnormally high level of energy intake. Later, when the excess weight has become burdensome and much activity is difficult or impossible, the factor of lowered energy output also enters. Several reasons may be presented for the breakdown in young people of the energy intake-output balancing mechanism which results in overeating. Each factor probably is responsible for its share of cases. Then some fat people with good-humored enthusiasm consciously overindulge in gustatory sensualism. Others lack understanding or are simply careless. How often one sees persons eat heedlessly food which they neither need nor very much enjoy. Family habits of eating vary. Some families set a "groaning board" which constitutes a constant temptation to overeating. Once this habit has been established it takes more food to give a feeling of satisfaction and thus a vicious circle is initiated². The members of such a family ingest many more calories than those in a household who prefer thin soups, salads and fruits. Wilder³ suggested faulty functioning of a center in the diencephalon which regulated the sensation of hunger for the failure of the energy-balancing mechanism in some of the obese. This does not, however, mean that a metabolic anomaly is operative. The primary demand for energy requirements is always met in all people. Attentive control of the food intake to this level will mean that no energy in excess of needs will be available for conversion into fat and obesity will be avoided.

It must be recognized that obesity can result from an excess energy intake only, whatever may have been the background of the overeating.

II

Acceptance of the fact that all obesity is alimentary makes it clear that the cure of obesity can be accomplished by no other means than a reversal of the situation bringing it about, the creation of a negative energy balance. Massages and hot baths do not lower energy intake or increase energy-output appreciably, so they are of no value in the correction of obesity. Indeed, they may, by increasing the appetite, lead to a greater plus energy balance. Any weight losses noticed after physiotherapeutic procedures result from loss of water, will be of no more than a few hours duration, and will contribute nothing to the removal of the excess fat. The appreciable weight losses shown by the scales after purging are likewise dependent upon loss of water. When this is pointed out, some

patients interested in scale readings only attempt to maintain the weight loss by limitation of fluid intake. This is, of course, unwholesome and never successful, because the body will establish its water-balance by tenaciously retaining the water in the food eaten and any little that is taken to quench thirst. The reduction in weight by removal of fat can be accomplished only by a negative energy balance.

III

A move in the direction of a negative energy balance can be made by increase of output. A larger energy expenditure can be brought about by drugs, and by exercise.

PHARMACOLOGICAL PRODUCTS

The administration of thyroid preparations increases energy expenditure; but it is prone to cause tremor, tachycardia and emotional instability. These by-effects are unpleasant. Furthermore, thyroid medication is unwholesome and definitely contraindicated. The basal metabolic rate in the obese is normal.^{4,5} It is noteworthy that in the obese the two factors, surface area and level of oxygen exchange, which are related to each other to obtain the metabolic rate are proportionally increased. But the increased surface area of these patients results from laying on of fat, a tissue physiologically inert. The true basal metabolic rate should be determined by relating the level of oxygen exchange to the actively functioning, vital tissues alone. This means that the factor, surface area, employed in the calculation should not be the actual surface area in the obese patient, but his surface area at his normal weight. When this is done it is seen that the obese have a plus basal metabolic rate of from 25 to 30 per cent in relation to their actively functioning tissues. One series of patients may be cited in illustration:⁶ Five obese patients who averaged 94 pounds overweight showed an average energy exchange of 71 calories per hour. This gave an average basal metabolic rate of minus 3 per cent, a normal figure. Fifty-eight calories per hour would have given a normal rate for these patients if they had been of normal weight. The 71 calories per hour observed gave an average basal rate of plus 23 per cent as related to the ideal weight. One should not, of course, elevate further such a high basal metabolic rate.

Thyroid medication is relatively ineffective. A daily deficit of no more than 1000 calories a day can be accomplished—if no increased intake occurs. A caloric deficit much greater than that often can be accomplished by diet. Furthermore, thyroid preparations can not be taken indefinitely and any reduction resulting from their use alone will, therefore, be temporary.

The same objections apply to any other drug used to increase energy output. Dinitrophenol has the additional danger of possible cataract formation.

EXERCISE

Increased energy expenditure can, of course, be brought about by exercise. An increase effective in the treatment of obesity results only from much exercise, hours long. Morning and evening calisthenics are of no avail. The necessary amount of exercise is contraindicated in many obese persons because of elevated levels of oxygen exchange, cardiovascular systems already under strain, broken arches, and easy fatigability. Exercise in persons young and vigorous enough to take it without damage will invariably increase appetite. Unless rigid control of food intake is also practiced no negative caloric balance will result. Even so, the negative energy balance which can be accomplished by amounts of exercise possible for only a few is, as with drugs, relatively ineffective when compared to that possible by careful dieting.

DIET

Dieting can bring about caloric deficits twice as large as those possible by any other means; and dieting can be continued for as long as necessary to cure the obesity. It teaches the patients the principles of wholesome nutrition so that when reduced they know how to eat properly. It often makes control of appetite after reduction easy so that relapses are less likely to occur. The long period of control of gustatory overindulgence will in most patients correct abnormal tastes and cultivated habits of overeating. When this bad habit is corrected it takes less food to satisfy, so that as much comfort and pleasure results from wholesome kinds and quantities of food as was afforded, when obese, only by an excessive caloric intake. The best, indeed the only practicable, way for any patient to attain a caloric deficit effective for the cure of obesity is by limitation of food intake.

IV

The creation of a negative energy balance for the correction of obesity has been accomplished by several dietary regimens. Folin and Denis⁷ employed repeated periods of fasting and found this method moderately effective and safe. Harrop⁸ suggested diets limited to milk and bananas exclusively, or for two meals a day. The first strict regimen afforded 900 to 1000 calories and most essential foodstuffs in nearly adequate amounts. The second permitted a more general but carefully planned meal in the evening with somewhat less severe restriction of calories. These diets resulted in satisfactory weight losses if continued long enough. They had the real advantage of simplicity

and inexpensiveness. There was little or no discomfort from hunger because of the hunger-satisfying value of milk and bananas. Gordon and Nissler⁹ keeping in mind a theoretically possible hypoglycemia with restricted food intake, devised a dietary regimen called "dextrose moderately low calory intake." The meals were compiled carefully and the calories reduced to a final minimum from day to day. Dextrose candy was given at the periods of greatest hunger and presumably of lowest blood sugar levels. Satisfactory reductions resulted.

General diets moderately limited in caloric content have been widely employed. Usually they afford 1200 to 1400 calories. This results in a moderate caloric deficit leading to a gradual weight loss of one to two pounds a week. Such a slow weight loss, especially in those who are much overweight, is often so discouraging that patients do not persist. Oddly enough there is usually more discomfort from hunger with moderately limited diets than with those more severely restricted.

Evans and Strang¹⁰ treated a number of obese patients with diets supplying all the known essential foodstuffs by preparations and edibles of the lowest possible energy values. The menus contained from 400 to 600 calories permitting large daily caloric deficits, sometimes of 2000 or more. This deficit made up from oxidation of the stored fat resulted in weight losses of 3 to 4 pounds a week. The patients regularly displayed an increased feeling of well-being and less fatigability. This indicated that no vital tissues were being wasted and only the stored fat was being burned.

Evidence that no vital tissues were being wasted was given by several physiological considerations. The patients remained in nitrogen equilibrium throughout the period of treatment, often of months' duration¹¹. The menus affording adequate protein for the ideal weight often supplied but 5 calories per kilogram of actual weight. The index of creatinin excretion remained the same at the beginning, throughout the course of treatment, and at the end, and was normal as related to the ideal weight.¹² The oxygen exchange, higher in the obese than in people of normal weight, came down proportionally, except for minor variations, with the weight and surface area, but never to a level below that normal for them if of ideal weight⁴. The basal metabolic rate based on the actual surface area when obese, when partly reduced, and when a normal weight had been attained, was always normal. This was in sharp contrast to the depressed levels of oxygen exchange caused by starvation.

The supply of so much of the energy needs from stored fat, with the severely limited caloric intakes of Strang and Evans, compelled the body

to utilize metabolic mixtures of high ketogenic-antiketogenic ratios. There was ketonuria frequently but never ketosis. The ketonuria, often pronounced at the beginning, always cleared up during the first few weeks of dieting as it did with the successive periods of fasting employed by Folin and Denis⁷. These authors suggested that the ability of the body to burn high-fat mixtures increased with practice.

Many minor annoyances were relieved. With these diets so strictly limited in caloric content, as with others properly planned but more generous, elevated blood pressures were brought down with the weight loss in a gratifying percentage of cases. Cardiovascular insufficiency and glycosuria were improved and cleared up entirely in many who dieted until a near normal weight was attained. Few contraindications to these limited diets were recognized by Evans and Strang. They have never been employed in a tuberculous patient, chiefly, perhaps, because no tuberculous patient who was appreciably obese has been encountered. Should an obese person acquire tuberculosis it is at least possible that the improvement in physiological function resulting from a carefully balanced food intake leading to weight reduction would be beneficial. The diets were not employed during pregnancy lest some as yet unknown essential foodstuff necessary to its successful completion had inadvertently been omitted.

Evans and Strang encountered no misfortunes or even minor mishaps. When an adequate supply of essential foodstuffs is given no added calories are necessary.*

V

Menus supplying all known essential foodstuffs but containing no more than 600 calories are difficult to plan. This difficulty becomes an impossibility if an effort is made to make them interesting. And yet, because the treatment of obesity is too prolonged for continuous hospital residence, it must be carried out by patients supervising their own diets at home. Under these circumstances the co-operation in the accurate dieting necessary for results is not easily obtained. The nature of obesity and the principles employed in its treatment should be explained to the patient. It must be emphasized that the excess is fat tissue only, that no vital tissues are so built up. The idea that one or several endocrine disorders cause obesity should be uprooted. It is not necessary to speculate on the suggested possible mechanisms of the breakdown of the energy intake-output balancing

function occurring in endocrine disorders or to discuss unproven hypotheses of endocrine activity in relation to fat deposition or distribution. The patient should be assured that however low his energy expenditure may be, and from whatever cause, a wholesome menu can be provided which will supply no excess energy units, and thereby obesity can be avoided; and that however great his appetite may be, if he limits the intake to the daily fuel and replacement requirement, it will all be used for those purposes and none can be laid down as fat. He must be made to recognize that all obesity is alimentary. The distention of the skin in obesity is not pneumatic or spiritual; it is caused by an increased amount of tangible material. A moment's thought convinces that there is no portal other than the mouth through which it could have been introduced under the skin. All this excess material has been swallowed.

Patients should be assured that any negative energy balance they maintain will be translated with mathematical accuracy into oxidation of their stored fat with a corresponding diminution in the amount of this fat. The weight loss shown by the scales, however, is not regular, due to the variation in water content of the body at different times. Patients should be warned of this, lest a period of a week or more of accurate dieting with no change in the scale reading lead to discouragement and interruption of treatment. These plateaus of no weight loss and periods of greater loss than the caloric deficit justifies have been suggested as evidence of some anomaly of metabolism. The phenomenon is obviously due to water swings. Irrefutable proof of this has been afforded by the studies of Newburgh and Johnston¹⁸.

It is sometimes wise to correct the impression held by so many vigorous people with good appetites that hunger is a sensation to be avoided and satiation one to be assiduously sought after. Moderate hunger is wholesome and satiation an evidence of over indulgence. The pleasure of eating is sensual in character, and if employed to excess may be compared to the abuse of alcohol. Although a proper amount of food is necessary and right, any amount in excess may properly be regarded as immorality. This point of view helps many patients to coöperate in dieting.

The difficulty of controlling appetite has at times been exaggerated. This, perhaps, would appear from the suggestion of small doses of digitalis, or ipecac, to convert the zest for food of those with healthy appetites into indifference or repugnance. Many persons would, no doubt, contemplate with dismay the idea of living out their lives denied of the positive pleasure of eating unrestrictedly of good food, rather than keeping

*FOOTNOTE: Sample menus from all systems of diet mentioned above, suitable for almost all patients, appear in *Diets for Metabolism* W. B. Saunders Co., Philadelphia, 1941.

strictly to moderate indulgence in this delight.

Evans and Strang pointed out to all prospective patients that the menus did not attempt to pander to sensuality of appetite. For success a patient must be willing to forego temporarily the pleasures of the table. Patients who are unwilling to do this cannot be treated successfully, and the majority of those who accept this point of view persevere long enough to reduce to the desired weight.

Patients who diet with a correct understanding of the subject have little hunger, certainly no more than they should have normally. They must, however, be taught to distinguish between hunger and the memory of the joys of gluttony; must follow the sage advice of the poet-philosopher—

Make less thy body hence; and more thy grace:
Leave gormandizing.

CONCLUSIONS

Success in the treatment of obesity demands the recognition that: it is always alimentary; it can be cured by no means other than accurate dieting; and the necessary accuracy and duration of dieting can be accomplished only by those patients who are willing to control their gustatory sensualism.

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MEDICAL HISTORY IN NEWPORT

(Editorial in *R. I. Med. J.*, May)

The Pilgrim Fathers had little use and no place for dissenters from their ideas. Episcopalian Holmes suffered thirty stripes rather than pay a fine of thirty pounds; John Clarke was put in gaol and paid a fine of twenty pounds; Roger Williams was banished from Plymouth Colony; the less fortunate Quakers were hanged on Boston Common. In the spring of 1636, Williams fled into the wilderness, where, joined by other refugees, he attempted a settlement at Rehoboth, east of the Seekonk River. But warned from this site, which encroached on the holdings of Plymouth Colony, the fugitives crossed the river to the west shore. Williams chose the place which he named Providence while a band led by John Clarke journeyed southward to Aquidneck Island where they purchased land from the Indians and founded the settlement at Newport.

The Puritans enjoyed freedom in Plymouth Colony, Baptists flourished at Providence; but Newport, as Cotton Mather stated, "was occupied by Antinomians, Anabaptists Quakers, Ranters, and everything else, and if any man has lost his religion, he may find it in this general muster of opinions." When Quakers were hanging from the trees on Boston Common, the Governor of Rhode Island was a Quaker.

Until 1760 no physician settled at Providence; but the founder of Newport had a medical education, had signed his name, "John Clarke, Physician, of London," and he practiced medicine in Newport and on Sundays preached in the First Baptist Church. For a hundred years John Clarke was followed by a line of eminent physicians. The names of Hooper, Halliburton, John Brett, Isaac Senter, Walter Channing, and William Hunter are notable in medical history. Previous to 1772, Dr. Jonathan Easton of Newport was practicing inoculation against smallpox. Dr. Benjamin Waterhouse brought the first knowledge of vaccination to this country when he returned from England in 1800 and first proved its value by vaccinating his own children.

Dr. William Hunter came to Newport in 1752 after completing his studies at the University of Edinburgh under the celebrated Munro, Senior. Dr. Hunter practiced at Newport twenty-four years. His apothecary shop, his medical library, and his collection of surgical instruments were famous in their time. In 1755-1756, Dr. Hunter gave lectures on anatomy and surgery in the Senate Chamber of the Old Colony House at Newport. The lectures were advertised in the *Boston Post* in January and February, 1755.

About the year 1730, Dean Berkeley created a medical furor at Newport by his advocacy of tar-water as a cure for most diseases. Reverend George Berkeley, an Irishman, educated at Oxford, had sailed from England with the intent of founding a school for the benighted savages in Bermuda. The captain of his ship could not find the Island of Bermuda but succeeded in discovering a land unknown to him but which proved to be in the vicinity of Newport. Here for some years Dean Berkeley preached in Trinity Church. At Middletown he built a fine residence which he named Whitehall and which he presented to Yale College. In 1730 he founded the Newport Philosophical Society, which sponsored the Redwood Library, oldest American library in continuous use. On his return to England in 1732 he was made Bishop of Cloyne. In 1733 he sent from England the organ which is in Trinity Church.

The Potent Drug Iodine*

J. G. JOHNSTON, M. D., Charlotte

IN THESE latter days we are so engrossed in our study of the newer things and drugs that many times we forget those that are older, some of which are as valuable as some of the newer, more recent drugs, or even more so. So lest we forget, I desire to call your attention for a few minutes to one of the older drugs that has always held a great fascination for me and has given me much satisfaction in its use over many years. That drug is Iodine.

Iodine is a peculiar, non-metallic, elementary solid substance with atomic weight of 127. It exists in waters of the ocean, in some mineral springs, in some marine animals and in seaweeds from the ashes of which formerly it was most commonly produced. It exists also in some land plants and in cod-liver oil. It is found in certain minerals, the water of certain rivers, and in the water supply of several towns. The soils of some sections have rather large quantities of iodine while others are so nearly devoid of it that in these regions goitre is so prevalent that the regions are known as goitre belts.

At ordinary atmospheric temperature iodine is a solid crystalline body with a specific gravity of 4.947 which fuses at 225 and boils at 347° F. Under the influence of heat it gives off vapor of a rich violet color which is remarkably dense, having a specific gravity of 8.782—almost twice as heavy as the solid element. Iodine possesses great powers of combination and forms iodides with pure metals and most of the simple non-metallic elements. It is sparingly soluble in water but dissolves easily in alcohol and ether, forming dark-brown liquids. The characteristic and common test for iodine is that with starch it forms a compound of a deep blue color. This test is so delicate that it is said that a solution of starch dropped into water containing less than a millionth part of iodine will be tinged blue by it.

While iodine is largely used in photography and in the arts, in Medicine it is employed in its pure state, but much more frequently in the form of the iodides, especially that of potassium, which has been found to be of great benefit in goitre, scrofula, diseases of the liver and spleen, in syphilitic affections, rheumatism and enlarged glands as well as in lead poisoning. Potassium iodide is practically a specific for gummas and all gummatous swellings. Iodide of iron is also valuable in

chlorosis and almost all of the anemias. Iodine is a non-conductor of electricity and is electronegative. About thirty years ago a patient who was rather obese came to the hospital for operation but before she was operated on her chest began to fill up with fluid. In spite of all the accepted methods of treatment the edema became worse until her lungs were almost entirely full. As a last resort, for it did not seem possible that she could live twelve hours, iodine was driven into her chest with electricity from a strong galvanic battery. Next morning she was better. The edema continued to subside. She went home in a few days to recuperate, coming back in a few months for her operation.

I am sure that many of you here know much more of the effects of iodine in general treatment than I, but I wish to call your attention to some things in other lines in which iodine has given me excellent results.

Case Reports

A white man, married, 36 years old, rate clerk, came in saying he had chronic nasal catarrh and had had it for several years. His breath was bad and examining his nose disclosed each nostril almost entirely full of large green scabs which obstructed his breathing and when cleaned off left the mucous membrane thickened, with many ulcerated areas over it which bled easily and rather copiously. He said that he had been treated by various men with no improvement and was very much discouraged over his condition. He put it squarely up to me saying, he had spent a good deal of money on his nose, that if you can help it, all right, however, if not, he wanted me to say so, and "I will just let it go." My reply was something like this: You have a condition that is chronic and it will take a long time and lots of patience on your part as well as mine to do anything with it. Have you the necessary patience? He replied that if I could help him, he would stick just as long as I said.

We started treatment June 28th, 1939. His nose was cleaned out thoroughly with peroxide, dried and packed with a weak solution of free iodine in oil, leaving it in the nose about thirty minutes and spraying the nostrils with an oily spray on its removal. He was also given some of the iodine solution to drop in his nose night and morning. At first he came almost every day and after three months twice a week. September, 1940, I increased the strength of the iodine solution, but in a short while he complained that the stronger solution caused so much secretion that he could not keep the cotton plug in the nose long enough, so it was weakened to one-half of its original strength. Since that time we have alternated with this weaker solution and the original free iodine solution. Now as to the results: I cannot say that he is cured—far from it, but his nose is comfortable. We rarely find one of the green scabs now and when we do it is small and the odor has gone. The scabs we find now are small.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

soft and white, coming away easily with no bleeding. Some days I do not find any scabs and then generally a simple pack is used. He has learned to blow the packs out of his nose when they have stayed long enough, so he does not have to remain in the office so long. He has been subject to colds during both summer and winter, so last fall catarrhal vaccine were started, once a week, and he says he had only one cold this winter and that one he attributes to dust from tearing up the floor of the office in which he works. It has taken a long time to reach this point, but he is happy over it and I should be, although I would be very glad to know how I could accomplish the same results in less time. I do not know how much longer we shall have to keep it up, but I intend shortly to limit his treatments to once a week, and if we even have to continue his treatments indefinitely, it could be much worse.

A white, single woman clerk, consulted me February 11th, 1938, with the following history: Some years ago she was operated on for some sinus condition for which an intranasal operation had been done and for the past several months she had been unable to breathe through her nose. Examination showed both nostrils filled with hyperplastic material having somewhat the appearance of polypoid tissue, but more solid and containing much less fluid in the tissues. Through the left nostril she could occasionally get a slight amount of air, but the right was closed absolutely. She was miserable; she wanted something done for her nose—anything except another operation. She was told clearly what the chances were for accomplishing anything by non-surgical methods and that it would be a long-drawn-out procedure. She insisted, however, and we began packing each nostril as far back as we could with cotton saturated with a weak solution of free iodine in oil. She came religiously for about two months on an average of three times a week, sometimes staying as long as two hours before the pack was removed. Usually though, it was removed in from twenty to thirty minutes. We saw no encouraging results for three weeks when we began to notice that the packs went farther back into the nasal cavity than at first, and it took about three months' treatment before she got her first breath of air through the right nostril. From then on we made continuous, though slow, progress, for there was much tissue to be absorbed.

By April 1st she began to come twice a week for treatments with an extra one occasionally. During July, 1938, she was much encouraged, and was much improved, but continued to come regularly for her treatments. October she was much better and began coming only once a week, usually staying about two hours before removing the pack. From that time she made rapid improvement both in her ability to breathe through the nose and also in its progress to normality. In December, 1938, she began coming only twice a month and continued to improve and kept up this program both in attendance and improvement until dismissal.

She was dismissed April 25th, 1939, with a nose that functioned perfectly. Her sense of smell had returned and is now practically as good as ever. I have not seen her as a patient since that time, but see her occasionally on the street and she says that she has had no trouble with her nose whatever since that time.

De Schweinitz, in his *Diseases of the Eye*, speaks highly of iodine in the treatment of scleritis and sclerokeratoiritis, particularly in those that may be called rheumatic cases. In induration of the lacrimal gland iodine is one of our most valuable drugs. Iodine introduced into a dermoid cyst after

evacuating the contents is valuable as well as in the lacrimal sac after curetting. He thinks that iodine is one of the most valuable drugs in injuries of the sclera as a disinfectant before suturing.

Fuchs, in the fifteenth edition of his book, says that iodine is a valuable drug in diseases of the lids and in many of the diseases of the anterior part of the eye. He uses it externally and also internally. Keratitis, in his opinion, is a very intractable disease, but he thinks iodine does as much or probably more for this condition than any other drug. In superficial and deep scleritis he thinks well of both iodine and potassium iodide in their treatment.

Iridocyclitis and its sequelae are best treated with mercury or salvarsan, followed by potassium iodide, in his opinion. Potassium iodide or a course of inunctions are useful in choroiditis for their absorptive action and may be valuable in both specific and nonspecific cases. Treatment of optic neuritis must of course be directed at its underlying cause, and in all cases Fuchs thinks that absorptives, as mercury and potassium iodide, are always indicated, but on the other hand, he says that acute syphilitic cases of optic atrophy should have antiluetic treatment, while in late syphilitic disease he avoids mercury and uses iodine or strychnine by injection or galvanism. Unfortunately all of these usually fail. He also mentions potassium iodide in the treatment of early cataracts, but that is also generally a failure.

There are new developments in the manner in which iodine is used in some eye cases that are, to say the least, interesting and sometimes with surprising results. Some of these have been known for many years, but under stress of seemingly more important things have been overlooked and forgotten until some emergency, accident, or stress of some kind brings it back into memory and rescues it from oblivion. In some of my cases these have been responsible for their resurrection. I will take your time only long enough to report three cases:

Case Reports

A machinist, thirty-six years old, came in January 1st last, with the history of having gotten a piece of steel in the cornea of the right eye on December 16th. He said that he had a positive blood report and was taking injections. Left eye normal, with vision equal to 20/15. Right eye: Cornea hazy. Pupil dilated with ring of pigment at former attachment of pupillary margin to anterior capsule of lens. Many fine vitreous opacities with one large dense opacity about opposite entrance of foreign body in cornea were found. Tension normal, but eyeball was very red and tender on pressure. No distinct view could be had of the retinal vessels, but their location could be surmised by a slightly more distinct redness in their locality. Vision indistinctly 20/50. One c.c. of a weak solution of free iodine was injected subconjunctivally in the right eye. Atropine ointment and hot applications were ordered every three to four hours. Aspirin for relief of pain if necessary. January 2nd—Right eye feels much better. Pain relieved. Can see disc and vessels of fundus indistinctly.

Atropine ointment continued. Right eye vision 20/40. Left eye vision 20/15.

January 4th—Right eye vision 20/30 plus. One c.c. of a weak solution of free iodine was injected subconjunctivally. Right eye: Ring of pigment almost entirely absorbed from anterior capsule, only one spot, $1 \times 1\frac{1}{2}$ mm., and one pin-point spot remaining. Ciliary redness gone, but some general redness of eye ball remains. Good view of fundus, vitreous opacities very much diminished.

January 6th—Almost all redness gone from right eye. No pain. One small spot of pigment in lens capsule. One c.c. of a weak solution of free iodine injected subconjunctivally and atropine in eye.

January 8th—Redness gone. No pain. One small spot of pigment on the capsule. One c.c. of a weak solution of free iodine injected subconjunctivally and atropine.

January 10th—No pain, redness gone. Vision in right 20/20. Dismissed. Has been working since and has had no trouble.

A white man, 40, came in December 16th, 1940, with history of having been struck in right eye four days before. Eye painful when touched or when he stoops over. Pupil normal in reaction. Eye red with deep purplish appearance. Scleral vessels considerably dilated. Tension normal, cornea normal. One c.c. of a weak solution free iodine was injected subconjunctivally and hot packs of epsom salts solution were ordered. Right eye vision 20/40. Left eye vision 20/30. He had a cold and was given cod-liver oil with creosote and guaiacol.

December 19th—Tenderness and redness of eye much improved. Pain was entirely gone and only slight redness in upper nasal area. One c.c. free iodine solution again injected subconjunctivally.

December 23rd—Tenderness and redness gone. Right eye vision 20/30. Left eye vision 20/30. Dismissed.

White matron, 25, came in February 6th, 1937, with history of everything looking hazy for the past two weeks. Her urine was negative, Wassermann negative, hemoglobin 50, white cells 6,000. No pain or headache. Right eye vision 20/30 plus. Left eye vision 20/20. Right eye: Triangular area of opaque spots in central part of posterior surface of the cornea with base of triangle at the lower part of the cornea. Could make out no opacities of the vitreus. Left eye: Almost whole of the posterior surface of the cornea was covered with the same kind of spots. In addition the vitreus was filled with fine dust-like opacities. She was given ten drops of saturated solution of potassium iodide three times a day and the right eye was injected subconjunctivally with one-half c.c. of weak free iodine solution. The left received a conjunctival injection of one-half c.c. of colloidal iodine.

February 13th—In both eyes Descemet's membrane had cleared remarkably, only a few of the spots being seen on the posterior surface of each cornea. Very few fine dust-like opacities of the vitreous could be seen. There was more reaction in the left eye from the injection of colloidal iodine than in the right which was injected with free iodine, but the improvement seemed to be about equal in both eyes. Each eye was again injected with one-half c.c. weak free iodine solution subconjunctivally.

February 20th—Very fine pin point opacities seen on Descemet's membrane only with slit lamp. One-half c.c. free iodine solution injected subconjunctivally below in each eye.

February 27th—Eyes entirely clear. Vision with correction 20/20. Dismissed with instruction to come back if she had trouble, but to date she has not returned.

Of course these few cases are insufficient from which to draw any satisfactory conclusion as to

treatment. However, I believe the results in these individual cases are such that we may be encouraged to further investigate and study the effects of iodine in these and other conditions.

HYPERTHYROIDISM IN ELDERLY PATIENTS

(D. H. Poer, Atlanta, in *Jl. Med. Assn. Ala.*, May)

Hyperthyroidism in its subacute and less dramatic types may be difficult to recognize at any age of life but particularly in elderly patients. In the hyperthyroidism of the elderly the cardiac symptoms frequently so predominate that the nature of the trouble is not suspected at once. Suspect the thyroid in every case of cardiac disorder, particularly in the latter decades of life. Stare, moist palms, slight tremor, or the quality of the pulse, may cause suspicion. Confirmation with basal metabolic studies may clinch the diagnosis; however, in some patients the basal metabolic rate is not increased.

Hyperthyroidism after middle life may fail to show any striking cardiac symptoms and present only the picture of extreme exhaustion, fatigue, weakness and loss of weight.

Iodine is to be administered along with sedatives, bed rest, and increased diet, and subtotal thyroidectomy done in one or two stages. There was in 80 patients, one death, this due to secondary hemorrhage. Symptomatic improvement was obtained in all cases. Irradiation was used for temporary effect while the patient was being prepared in three cases of the cardiac group.

THE CURE OF COCCYGODYNIA

(G. S. King, Bay Shore, N. Y., in *Ind. Med.*, Jan.)

Pain in the coccygeal region is usually constant and distressing, so that car riding and sitting become painful. The pain is more pronounced by pressure even so slight as that resulting from the weight of the clothing.

During the last few years a new treatment has been employed which has given satisfactory relief in many cases of long duration.

With the patient on the left side in Sim's position, the outline of the coccyx is carefully noted by palpation; the area directly over the coccyx and its tip is painted with tincture of iodine. With one finger on the tip of the coccyx above the anal opening, a hypodermic needle fitted to a 10-c.c. syringe filled with 2% novocaine solution is inserted down to and directly on to the bony structure of the tip and 3 c.c. is injected into the tissue around and anterior to the tip. The needle is partially withdrawn and further injections of the solution are made over the dorsum of the coccyx and laterally into the soft tissue on either side up to its attachment to the sacrum. In 10 minutes the area is nonsensitive. Following the same technic 10 c.c. of hypertonic saline solution are then introduced into the same point where the novocaine solution had previously been injected.

There is seldom any reaction. The relief from the coccygodynia is immediate and usually lasts from 5 to 10 days. Usually 5 or 6 injections at weekly periods are sufficient to give permanent relief.

SULFANILAMIDE—Patients should be cautioned preferably to stay at home and at rest while taking the drug and not to drive an automobile, make any important decision or sign any papers while the drug is being administered—*Jl. A. M. A.*

DIGITALIS AND ATROPINE in combination have given good results in a series of several thousand cases of seasickness.

Progressive Lipodystrophy—A Case Report And Discussion of the Problem *

GEORGE R. WILKINSON, M.D., Greenville

INTRODUCTION

PROGRESSIVE LIPODYSTROPHY must be classed as a rare disease. Kraus¹ in the last edition of Cecil's *Medicine* states that only some fifty cases are reported in the literature, while Serejski,² quoting Leschke, places the number of typical cases on record at seventy-two. The pathogenesis is mooted. Says Brain:³ "Its cause is unknown, though endocrine abnormalities, disturbances of autonomic innervation and infections have all been held to play a part in its etiology. To these Pollak⁴ adds fracture of the base of the skull, basal meningitis and hydrocephalus. Progressive lipodystrophy, the term, is used to designate a disturbance characterized by abnormality in the distribution of subcutaneous fat; it occurs more exclusively in women, beginning before puberty with disappearance of fat in the face, neck, arms and trunk; after puberty with progressive symmetrical increase in the subcutaneous fat in the hips above the genitalia and lower extremities.

Case Report

History: The patient is a 54-year-old white woman, the third child of a family of three girls. Her father, when 30 years of age and healthy, was killed in a railroad accident. The mother died mentally deranged at 30. The older sister died of pellagra and gallbladder disease at 50. The younger sister survives, is healthy, though slightly obese. In the mother's family there were seven siblings, in the father's, five; all reached maturity. None had a similar disease. One first cousin has goitre. No other endocrine disorders are noted.

The patient was born physiologically at full term. Her childhood was uneventful. She remembers being slightly obese until she developed erysipelas of the face at the age of 12. The erysipelas was treated with a lead plaster. During her convalescence it was noticed that the face, arms, neck and trunk began to get thin. For a year she was kept out of school, rested and overly fed. When 13½ she contracted typhoid fever, recovering without complications. Menstruation began at 14. The cycle was never regular; the flow lasted three to four days and was painful and scanty. During her 14th year the lower extremities began to enlarge, the enlargement starting just above the ankle on the right leg. Soon a similar fat-like mass

appeared on the other side, so the legs looked like mates again. At 14 she re-entered school. She did very well in grammar in high school and college. Graduating from college she taught school and married at the age of 26. Her first and only pregnancy was interrupted on account of nephritis. Following this there was further enlargement of the legs. At 34 the appendix was removed. At operation absence of the fat usually seen in the omentum was noted. At 51 she married a second time. Menstruation ceased at 52. Following the cessation of menstruation the fat pads around the knees became larger. She now presents herself for examination, seeking relief on account of the difficulty experienced in walking. The pads just above and below the knee compress each other when she stands and scrape each other when she walks unless she walks with her feet far apart.



*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

The patient is happily married to her second husband. She lives at home, keeps house, maintains her interest in the adopted children she has reared. Her insight and judgment are good. Despite her physical disabilities she maintains a cheerful outlook and has not permitted her physical handicap to interfere with her enjoyment of life.

Physical Status: Age 54, height 61½ inches, weight 124½ pounds. The face, neck, arms and upper half of the trunk are emaciated. The veins in the arms are prominent. The outlines of the underlying muscles are visible. The cheeks are particularly hollow. On palpation the sucking pads are not felt. The upper part of the body is sharply masculine in appearance. There is some little fat over the lower abdomen and genitalia. Just above the knee caps are large pones of fat. Large pads are seen mesially and laterally above and below the knees. The pad below the knees appears to be one solid mass extending clear across the front of the legs. Below these pads the legs are rather large to the ankles. The feet are relatively thin and small. Quoting Granzow:⁵ "In the lower half of the body a Venus of an exaggerated Rubens type, while the upper part of the body and the head are witch-like in appearance." The skin is dry and rough over the emaciated portion of the body. Over the lower extremities the skin is soft, moist, pink and elastic. There is nothing remarkable about the eyes, ears, nose or throat. There is no general glandular enlargement. The breathing is free and easy. The lungs are clear. The arteries are just palpable, the blood pressure not elevated. There is a well healed scar in the lower right abdomen. The kidneys, spleen and liver are neither tender nor enlarged on palpation. The genitalia are physiological. Tendon, plantar, abdominal and eye reflexes are physiological and Chvostek's sign is negative.

The pilomotor reflex is not elicited by heat, cold or scratching over the emaciated area. In the lower extremities the reaction is readily obtained with slight stimulation. The application of a hot test-tube and ice produces redness which is slow to appear in the upper extremities. Heat to the lower extremities produces redness readily which disappears quickly. An ice cube against the skin blanches the skin out quickly and promptly produces goose-flesh below. Stroking the skin with the fingernail produces a white line followed by a pink flush which does not spread. Same scratch to the lower extremities produces a much wider white line which spreads rapidly; turns pink in thirty seconds and produces after a minute a wheal. In a room temperature of 74, the upper extremities are dry. The lower extremities are quite moist.

Viewing the body in this room temperature the upper part of the body is rather pale with some acrocyanosis, while the lower part of the abdomen and legs are florid.

Laboratory Study: Hemoglobin 88 per cent; Wassermann, Kahn, Kline exclusion test negative; leukocytes 7,400—pmns. 62, small lymphs. 36, monos. 2; erythrocytes 4,500,000, uniform in shape and size; numerous platelets; no malarial parasites found; hematocrit 3.5 mm.; sedimentation 9 mm. in 60 minutes; blood cholesterol 181 mg. per cent; serum calcium 8.5 mg. per cent; blood chloride 412 mg. per cent; blood sugar 105 mg., non-protein nitrogen 25 mg., per cent. Urine specific gravity 1.011, otherwise negative.

Roentgenographic films of the lower extremities shows marked increase in soft parts. The muscles are clearly seen and the difference in density between the muscles and fat indicates the presence of fat deep in the leg between the muscles.

DISCUSSION OF PATHOGENESIS

Simmons first described this anomaly in 1911. Considerable speculation has arisen as to its probable etiology. At first the difficulty was classed as of endocrine origin. Pollak⁴ and later Serejski² pointed out the possibility of the condition being due to difficulty in the diencephalic centers, the idea being that the vegetative center probably has some latent or congenital weakness which does not manifest itself until other difficulties arise—with the menses, with gestation, at the menopause, because of trauma or infection. Pollak describes a case which occurred after an injury sustained when a man was covered with stone following a blasting mishap. Serejski presents a case which is more classical in its course. His case in many respects is quite analogous to the case here reported, insofar as the atrophy appeared before puberty, the hyperplasia beginning just after puberty and becoming quiescent, then with gestation further hyperplasia took place as in Serejski's, being quiescent for many years and then, in this case, beginning to enlarge after the menopause.

Serejski stresses the abnormal response of the vegetative nervous system to pilocarpine, adrenalin and atropine. In the case here reported the investigation of the autonomic nervous system shows a deficient pilomotor reflex over the emaciated area with a marked response over the fatty region.

The vasomotor response to heat over the emaciated area was slow to appear and lasted longer—the color response to the application of heat being a reddish purple, while the response to heat over the fatty area was quick and pinkish red in color. To the ice cube there was no blanching of the skin over the emaciated area, the contact point grad-

usually turning red. Over the lower limbs the skin blanched promptly with the cold contact and goose-flesh appeared below which did not occur over the emaciated area. Stroking the skin with the fingernail produced a fine white line which gradually turned pink, then failed to spread appreciably. Stroking the skin over the lower extremities, the line appears white, is wider, turns pink quickly and a wheal is formed. These differences in response indicate some difficulty with the autonomic nervous system and tend to support the contention of Pollak and Serejski.

SUMMARY

1. A typical case of progressive lipodystrophy is reported.

2. The pathogenesis of this disease is probably diencephalic in origin; the trigger mechanism endocrine, traumatic or bacterial.

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Discussion

DR. GRAHAM REID, Charlotte: I have enjoyed Dr. Wilkinson's presentation and we are indebted to him. Either the disease is rare (there are approximately 80 cases reported) or it is rare to find a victim of such lipodystrophy who is willing to be photographed as proof for the report.

The exact nature of the mechanism producing such altered storage of fat is open to speculation.

Various factors as you have heard mentioned have been postulated as playing major roles. The hypothalamus was first recognized as a factor in the control of carbohydrate metabolism in 1916 by Ashner, who found that by electric stimulation of the hypothalamic area glycosuria could be produced. While there is no uniformity of opinion regarding the extent or mechanism of this control, its existence in some form is generally accepted. Hypothalamic obesity has been frequently reported. Rony reports more than 50 cases of epidemic encephalitis observed by Grossman gained from 50 to 95 pounds following the disease. However, as progressive lipodystrophy involves not only regional obesity but regional emaciation, hypothalamic pathology as the all-embracing etiological factor would have to explain the emaciation as well as the obesity. Clinical evidence in favor of hypothalamic emaciation is not very impressive, and thus far no one has been successful in producing emaciation in experimental animals by hypothalamic injury. Symmetrical lipodystrophy has been attributed by some to disturbance in the peripheral autonomic nervous system. However, Cannon and others have removed the whole sympathetic nerve supply of one side of the body in kittens and allowed the animals to live until they doubled their weight. No difference was found

in the amount or distribution of fat on the two halves of the body. It is difficult to reconcile this result with the idea of specific peripheral autonomic control of fat distribution.

It is well known that fat has an affinity for different subcutaneous regions of the body, that regional obesity is likely to occur in many members of a family, and wide variations may be considered normal. Certain races have a predisposition to obesity and to regional collections of fat. Anthropologists generally agree that the Dutch, the South Italians and the Jews have a racial tendency to characteristic regional fat accumulation. There is a tribe in Africa in which tremendous accumulation of fat in the lower segment of the body is a tribal characteristic. While writers on the subject can come to no unanimity of opinion as to the specific nervous-system lesion or endocrine disturbance producing lipodystrophy, most authors agree that the essential element in the origin of this disease and other lipophilia is a congenital tissue predisposition, with glandular or nervous-system disturbances as provocative factors. Davenport, in studying the family tree of regionally obese patients, found that parents and offspring exhibited the same type of obesity in a surprisingly high percentage of cases, and worked out an elaborate scheme showing that the inheritance of regional obesity follows a mendelian pattern.

It is a distinct possibility that progressive lipodystrophy characterized by affinity of fat to the lower body segments in women is but an extreme case of genetically determined lipophilia.

TRANSURETHRAL REMOVAL OF LARGE PROSTATIC CALCULI.

(J. L. Emmett, Rochester, in *Proc. Staff Meetings Mayo Clinic*, May 7)

The majority of prostatic calculi do not cause symptoms and the patient is never aware of their presence. Such calculi are of no importance clinically. The most common symptoms arise because of infection or obstruction of the vesical neck, or both, frequency and urgency of urination, inadequate stream, burning and pain, hematuria and partial and complete retention. In 2 cases prostatic calculi caused chills and fever, though no local symptoms.

The type of operation to be employed depends on the experience and proficiency of the surgeon in the various types of operations. It would seem desirable to employ a measure insuring complete removal of calculi, however, one must not advise too extensive a procedure for minor pathologic conditions. My experience is against complete removal of the prostate and capsule for prostatic calculi. More conservative operations achieve entirely satisfactory results, remove all the calculi in most cases, and most of the calculi in the rest. I have seldom found it necessary to repeat an operation because of a few small calculi which remain in the prostatic capsule.

Contrary to the opinion generally held, very few prostatic calculi are too large to be removed or crushed transurethrally. Stones too large to be removed through the cystoscope can be maneuvered into the bladder to be crushed by means of a lithotrite. In cases in which very extensive calculous replacement of the prostate gland has occurred a few calculi may be left after transurethral operation; usually the stones in question remain because it is impossible to palpate the few remaining calculi against the cystoscope with the finger in the rectum or because some small calculi are embedded in the prostatic capsule too near the rectum to allow of safe removal. In most such cases the few remaining calculi will give the patient no trouble.

Gunshot Wounds of the Pregnant Uterus*

T. C. Bosr, M.D., F. A.C.S., Charlotte

IT SEEMS STRANGE that gunshot wounds of the pregnant uterus are so rare as to offer a kind of medical curiosity. Especially is this true when we consider the important place of firearms in the social affairs of the Negro race and the great number of other gunshot wounds, intentional and accidental, among this people. Since during her period of possible childbearing the average Negro woman is pregnant about half the time, and since Negroes live crowded together in small houses, and since there is hardly a gathering of them without a woman advanced in pregnancy being present, it would be expected that the large target afforded would be oftener struck. And to this chance must be added that of accidental gunshot wounds and attempts at suicide in other races.

In a review of the literature I find mentioned eleven cases occurring previous to 1910, but since I can find no available information concerning the extent and outcome of these cases I am unable to include these in my report. For the 30 years, since 1910, I find only nine reported cases, not including the one I am here reporting, which brings the total to ten cases in 30 years. Four of these cases occurred in this country, the other six in a number of foreign countries. No mention is made of a case in the Negro race.

Because of the small number of reported cases it is impossible to draw general conclusions. It would seem that each case must be decided on its own merits.

These injuries are of great interest to both those doing obstetrics and those doing surgery. They differ from the usual gunshot wounds in that two lives instead of one are at stake; and it is the general opinion that in any kind of disease or trauma and shock the patient's condition is made more hazardous by the state of pregnancy.

If a lesson may be drawn from the cases of which we have record, the reverse appears to be true, pregnancy apparently offering a kind of protective influence, so that the mortality appears to be much less than the general mortality in gunshot wounds of the abdomen.

The indications for opening the abdomen would appear to be the same as though the pregnancy did not exist. The probability of other viscera being injured is such that operation for exploration can scarcely be avoided, whatever may be the indication as to the effect on the womb and its fruit. By the same token the severity of the injury is determined chiefly by three factors: (1) the de-

gree of visceral damage; (2) the amount of hemorrhage; (3) the time elapsing from the time of injury to the completion of the surgical repair.

When exploring the abdomen and no serious injury is found to any viscus in addition to the uterus, there is room, perhaps, for a difference of opinion as to subsequent treatment. The general opinion is that the uterus should be emptied if the uterine cavity has been penetrated. The first question then to decide is whether to empty the uterus by cesarean section; or to suture the wound or wounds in the uterus, close the abdominal wound and await the expulsion of the fetus. Fowler advised a cesarean section if the fetus is alive and so far along as to probably survive. Otherwise he advises emptying the uterus from below unless there is already a large opening in the uterus through which the organ could be easily emptied and then repaired. The general opinion would seem to be that the uterus should be emptied by cesarean section at the time of exploration, at almost any stage of pregnancy; and most of the cases have been treated this way. In six of the ten reported cases including my own—all these in the various stages of pregnancy—cesarean section was done; in two cases hysterectomy was done "to arrest pelvic hemorrhage;" in one case operated on, the bullet was removed from the fundus of the uterus and the child delivered normally 17 days later; one case was not operated on and labor came on and a living child was delivered normally three days later.

Case Reports:

Housewife, aged 20, with two children. She has never had a serious illness and her health has been generally good. Menstruation always normal, last period September, 1938. Since cessation much nausea and vomiting and slight vaginal bleeding, but has had no treatment for this. She did not want another child or to endure this pregnancy. She shot herself in the abdomen with a .22 rifle February 19th, 1939, and was admitted to Mercy Hospital an hour later in mild shock complaining of pain in epigastrium and right side, also slight nausea. Pulse was 100, temperature 98°, respiration 24.

Patient was well developed, pregnancy appeared to be of five months' duration. There was a bullet wound with powder burns just below the right costal margin, and moderate rigidity and tenderness in the epigastrium and over the right side. No tenderness or rigidity of left side. No vaginal bleeding.

Preparation was made for immediate operation. While this was being done a flat x-ray picture (Fig. 1) was made by Dr. Robert H. Lafferty, on which he reported: The bullet entered just below the right costal margin, course downward, is buried in the pubis. In the passage the distribution of lead fragments leads us to think that it touched the cranium of the fetus.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

TABLE 1
TEN CASES. GUNSHOT WOUND OF THE PREGNANT UTERUS

<i>Re- ported</i>	<i>Term of Pregnancy</i>	<i>Symptoms</i>	<i>Extent of Injury</i>	<i>Operation</i>	<i>Fetus Result</i>	<i>Mother Outcome.</i>
Fowler 1910 Brooklyn, N. Y.	8 Mos.	Uterine contrac- tion, very little shock. 3 hours after injury. No vaginal bleeding.	Lower pressed revolver .32 against right side of abdo- men. Bullet passed through uterus. No other visceral injury. Exit left side of abdomen.	Cesarean section.	3 fingers of right hand. Recovered.	Recovered
Fudge 1912 Elmira, N. Y.	8 to 9 Mos.	Moderate amount of shock. Consider- able hem- orrhage from wound. No va- ginal bleeding.	Attempted suicide rifle .32. Entrance right flank. Exit 1 inch left umbilicus. Uterus incised by bullet. Child expelled from uterus into abdomen.	Child removed from peritoneal cavity. Wound closed through which child was expelled.	Through pelvis and spine. Dead.	Recovered
Tucker 1912 Shanghai, China	9 Mos.	12 hours after injury. Patient in marked shock and weak from great loss of blood.	Shot by robber. Bullet entrance 3 inches above and to left umbilicus. No exit. Entered at fundus of uterus. No other visceral injury.	Cesarean sec- tion. (No men- tion of trans- fusion.)	Bullet lodged in back. Recovered.	Had sudden collapse on third day. Thought to be hemor- rhage. Died.
Belcher 1917 Northern France	? Far ad- vanced	3 days after in- jury comforta- ble until labor came on.	Revolver bullet. Entrance in perineum near anus, ranged upward and lodg- ed in uterus.	No operation. Labor came on and delivered 3 days later.	Bullet in head. Born dead.	Recovered
Saint Goshlinger and Poier 1920 Paris, France	6 Mos.	Very little shock. Moder- ate tenderness and rigidity. Vaginal bleed- ing.	Shell gutter wound an- terior abdominal wall and gutter wound of uterus. No other visceral injury.	Cesarean sec- tion. Repair of uterus and anterior ab- dominal wall.	Back injury. Recovered Lived 15 hours.	Recovered
Stiglbauer 1924 Wien, Austria	?	6 hours after injury. Acute abdominal symptoms.	Browning pistol 7.65 mm. Entrance left gluteal re- gion and lodged in uterus. 3 perforations small intes- tine 1 sigmoid. Pelvic hemorrhage.	Suturing per- forations and hysterectomy to control pel- vic hemorrhage.	?	Recovered
Placint- jamu and Turcanu 1928 Bucharest, Rumania	Last Month	Uterine cramps no symptoms of peritoneal reac- tion at first. Fourth day pain in left side.	Bullet wound. Entrance to right of umbilicus and lodged in fundus of uter- us. No other visceral in- jury.	Bullet removed from fundus uterus. Child delivered nor- mally 17 days later.	Injury to left leg. Recovered.	Recovered
Motta Maia and Vianna 1929 Brazil	?	Moderate shock with symptoms of peritonitis 11 hours after injury.	Bullet wound. Entrance mid-epigastrium. Through fundus of uterus. Two perforations of lower ileum.	Cesarean sec- tion. Perfora- tions closed.	Injury to child's arm. Recovered.	Recovered
Belknap 1939 Damaris- cotta, Maine	6 Mos.	After several hours. Mild symptoms of shock.	Attempted suicide rifle .22. Entrance to left of umbil- icus. Through uterus and lodged in pelvis. Pelvic hemorrhage	Hysterectomy to control pel- vic hemorrhage	Wound of chest. Dead.	Recovered
Bost 1940 Charlotte, N. C.	5 Mos.	Pain in epigas- trium, moderate tenderness and rigidity. Mod- erate shock. Leucocytes 18,000, urine clear.	Attempted suicide rifle .22. Entrance right costal mar- gin, ranging downward and lodged in pubes. 2 holes in ileum passed through uterus and 2 holes in bladder.	Cesarean sec- tion. Closing holes in ileum and bladder. Indwelling catheter.	No injury. Lived 1 hr. Premature.	Recovered

A catheter specimen of urine was clear, w.b.c. 18,000, r.b.c. 3,500,000, hemoglobin 65 per cent.

Operation: Ether was administered by the referring physician, Dr. Van Matthews. A midline incision to the right and below the umbilicus was made since it was apparent that the injury was in the lower abdomen, although the entrance wound was rather high. There were several ounces of blood in the abdominal cavity. Two holes were found in the uterus, one in the fundus and the other in the lower segment anteriorly. Cesarean section was done by incising the area between the two uterine wounds, which were about five inches apart. Removing the few blood clots and some free blood, the fetus and membranes were found to be intact. The uterus was emptied and sutured. Search disclosed two perforations in the lower ileum two feet from the ileocecal valve, which were closed with 00 chromic catgut; and two in the dome of the bladder, which were closed and a drain put in this area. A self-retaining catheter was put in the bladder. Recovery was uneventful and the patient was dismissed from the hospital on the fourteenth day. The fetus was not injured by the bullet but, being about five months premature, it lived only about one hour.

Further pertinent information.—This patient again became pregnant and an elective cesarean section and sterilization were done by Dr. Van Matthews, May 14th, 1940, thirteen months after the injury. Both mother and child made a good recovery and are now in good health.

SUMMARY

Of the prospective mothers whose cases are reported (Table 1), three, including my own, attempted suicide with rifles. They all recovered. One woman was shot by her lover; two were victims of war wounds—one from a shell fragment and the other from a pistol ball; one was shot by a burglar. In the other four cases the manner of injury was not stated.

In seven cases there was no visceral injury other than that to the uterus. In these cases perhaps the force of the missiles was so used up in the pregnant uterus and its fruit as to prevent disastrous results to other viscera. Also in these seven cases

the enlarged uterus apparently offered further protection in filling the lower abdomen and forcing the intestines out of range of the missile. In three cases there were intestinal perforations; in my own case, bladder perforations in addition. This was the only bladder injury in the series.

Nine mothers recovered and one died, a mortality of 10 per cent. Although this series of cases is small, yet it tends to show a remarkable contrast to the general mortality of gunshot wounds of the abdomen—30 to 70 per cent or even higher.

Of the six viable children four recovered and two died, a mortality of 33 per cent.

The case here reported, together with the other reported cases, would tend to show that pregnant women can tolerate violent trauma, and that the pregnant uterus itself is very resistant to both trauma and infection, as no mention was made of puerperal sepsis in any of these cases.

This case also illustrates the importance of a flat x-ray picture when there is no exit wound, to determine the course of the bullet and the possible injury, so that the proper incision can be predetermined. Also, that a negative urinalysis report does not rule out bladder injury.

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Discussion

DR. CHARLES STANLEY WHITE, Washington: Mr. Chairman: Dr. Bost is to be congratulated on the handling of this case. It is a very rare case indeed. Remembering what Dr. Barker said last night about reduced birth rate and increased use of contraceptive methods, it will probably be a long time before we have another case. I don't see how anyone can formulate and plans to treat such a case. I never had a case of the kind and therefore I am not qualified to discuss it. I think it would be useless to draw up a plan for treating these cases. Each case is treated as a separate entity.

We Washington doctors are having lawyer trouble. What would be the charge against the mother of the child killed—whether she shot the child or whether someone else shot it. What would be the legal involvement?

DR. DERYL HART, Duke University School of Medicine:



Fig. 1.

Mr. Chairman and Members: I have no particular discussion to make of this, having never had a case or seen a case. The nearest approach toward a contribution would be a somewhat similar case where a young man suspected his sister of promiscuity and in taking his punishment out on her, shot her in the vagina. How he took aim I do not know. I do not know what the sequelae were. The only way I could treat a gunshot wound of the abdomen if it came to me would be to take care of it as Dr. Bost did and by emptying the uterus if it were damaged. I should think the greatest factor in increasing the chances for recovery there would be a fair probability in certain cases of the intestines and the bladder being missed entirely.

I have nothing to contribute to this very interesting case. I want to congratulate Dr. Bost and thank him for presenting it. I have enjoyed it very much. (Applause.)

DR. OREN MOORE, Charlotte: Mr. President and Gentlemen: There are many interesting features to the case presented, not only because of its rarity, but because of the history of the operator. Dr. Bost is one of those who have greatness thrust upon them. He sees those unusual cases that no one else sees. The case needing a simple appendectomy or squeezing a black head, he wouldn't know what to do with. But a fellow falls on a circular saw and is cut in two in the middle, then he drives fifty miles with his abdomen wide open; Dr. Bost sews him together and soon he's as good as new. Another, sixty years old, is gored by a bull and left with thirty feet of his intestines dragging around the barn lot. Unfortunately that was not so simple, getting thirty feet of intestines to stay in place. Dr. Bost would sew up one end and the other would get out, but he saved the man. The rest of us could see thousands and thousands of cases and never see one like those—a pregnant woman with a gunshot wound or a man's belly torn open by a bull.

Two boys drive a car against a convex wooden handrail of a bridge. A two-by-four, sharp at one end, is driven through one boy, tearing away most of his bladder and several feet of intestine and destroying most of his pelvic girdle. The doctor on the spot saws off a yard of the timber so as to be able to get the patient into his car, calls Dr. Bost to meet him at the hospital: result, a well patient, now father of a thriving family.

It is amazing with the multiplicity of things that have been going on since the invention of firearms and the number of women who have been shot—not to say any thing of the number that ought to have been shot—that we wouldn't have had a crossing up of the two factors in more than 19 cases that the doctor has been able to discover.

Obviously, our information on this sort of thing will be sadly multiplied when we get the records from the present war. It will be the first time that civilian populations have been subjected to the hazards of battle. We will certainly have proven all sorts of injuries to pregnant women after we have read the final history on the conflict that is now in the world.

As to how to handle this case, Dr. White and Dr. Hart have solved that problem.

As to what is the legal status—I asked Dr. Bost if he had any information and he didn't have—I am able to furnish you with this much information, sir. An injury to a child unborn at the hands of some other person is, in the State of North Carolina—injuries resulting in death—grounds on which to indict for manslaughter. That has been done several times.

As to the question of whether murder is involved here when suicide is attempted, there is on record a recent case in the State of North Carolina in which a young man tried to stop his fiancée from committing suicide. She attempted it and just as she grabbed the .32 to fire on her own head, it went off and the bullet hit something and

ricocheted and tore through his neck and he bled to death before help reached him. That young lady was indicted for murder, the grand jury holding that any accident resulting in death and motivated by malice constituted murder. This young woman was in the act of committing a crime—that is, suicide or attempted suicide—and that act motivated by malice, resulted in the death of her boy friend, and she was tried. The petit jury in that case turned her loose. Still, it didn't affect the legal status of the case.

An interesting case reported by Dr. Robert McKay, of Charlotte—and then I am through, Dr. Wilkinson—and that ought to make twenty. Dr. Robert McKay said during the World War a French officer was taking leave of his sweetheart after he had been home a few days. A German sniper took a crack and the bullet went through his testicles into the abdomen of his sweetheart and lodged in the uterus. Just in no time it met the ovum coming down and carrying a few sponges. The young lady recovered and pregnancy followed and went to term, and when the baby was born it held in its hand a bullet with German markings on it.

DR. BOST: Mr. President, I am deeply indebted to these gentlemen for their discussion and I am certainly glad none of these things happened to me and have just happened to my patients.

I believe Dr. Moore answered Dr. White's question and I am sure I have no immediate information on this notwithstanding the fact that I have been sued several times.

I have a summary here that I'd just like to go over that I haven't read. (Applause.)

DIGITALIS IN TREATMENT OF OBESITY

(Israel Brem, Philadelphia, in *Med. Rec.*, May 7th)

The chief difficulty in any weight reduction plan is the patient's abnormal capacity to eat, which amounts to habit, urgent hunger pains, or both. Last year we reported a series of 140 cases of alimentary obesity treated with the aid of digitalis. A second series of 60 cases of mixed etiology similarly treated is here reported.

The value of digitalis as an appetite-obtunding measure is confirmed. With its aid in a regimen including a reduction dietary and practical psychotherapy, results were highly gratifying. Before administering digitalis, the patient must be properly examined with a view to the detection of contraindications, and must remain under the doctor's observation and control until formally discharged.

CHOLAGOGUE AND CHOLERETIC EFFECTS OF BILE ACIDS AS COMPARED WITH OLEIC ACID

(E. W. Lipschutz & I. A. Feiler Brooklyn, in *Amer. J. Dig. Dis.*, May)

The cholagogue effect on the gallbladder of ten normals of 0.5 grams of (a) bile acid, and (b) oleic acid by mouth in a gelatine capsule, followed by water, was observed on different days by duodenal drainage and cholecystography.

The choleretic effect of these two drugs was studied on the same ten subjects on different days by means of trans-duodenal drainage.

Cholecystographic studies made on the same ten subjects one and two hours after ingestion of (a) 0.5 grams of bile acids and (b) 5 c.c. of oleic acid, on different days closely corroborated the results obtained with duodenal drainage.

Two of the ten subjects showed gallbladder emptying when bile acids were used. When oleic acid was used, nine of the ten subjects showed gallbladder emptying, manifesting itself in partial or total disappearance of the gallbladder shadow.

Our observations indicate the oleic acid possesses choleretic properties.

Glaucoma in the General Practice of Medicine*

HERBERT C. NEBLETT, M.D., Charlotte

NO ATTEMPT will be made here to present the technical aspects of the various types of glaucoma, its pathology, etiology, symptomatology, diagnosis and medical and surgical treatment, save to briefly discuss the procedure for its diagnosis in the hands of those who come in frequent contact with it. Good medical practice includes the conservation of vision, and family doctors make up the group who have the opportunity to recognize glaucoma in its early stage and thereby materially lessen the incidence of blindness from it. For many years the National Society for the Prevention of Blindness has bent its efforts to warn the profession and to educate the laity to the seriousness of glaucoma as a cause for defective vision and blindness. It is recognized as one of the major causes of blindness, comprising one per cent of all classes of eye diseases and ranks about fifth in the category of conditions producing blindness in this country. It has now become an important problem of the National Health program and its diagnosis and treatment is being aided by the Federal, State and local organizations for Rehabilitation of the Blind. In some of the larger cities special clinics have been organized and endowed for the care and treatment of glaucoma victims. These clinics have a registry of all known cases in their vicinity, a specially trained nurse makes frequent visits to the patient's home to take the intraocular tension, to see that prescribed treatment is being carried out and that the patient reports regularly to the clinic for urgent or routine medical and surgical care.

Glaucoma simplex is one of the most difficult of the diseases of the eye to control even by the best means we can now command. This, predicated by the fact that glaucoma simplex is more common than all other types combined, is the cause of blindness in the great majority of all glaucoma cases. It is least amenable to treatment; it is insidious, rarely causing pain or loss of central vision until late in the disease. At that stage neither medical nor surgical treatment can materially prevent its progress.

These factors seriously handicap us in diagnosis and treatment. The patient is often not conscious of the condition, pays little if any attention to the symptoms of narrowing of his visual fields, glimmering vision, ill-sustained ability to use the eyes as before, and gradual depreciation of visual acuity. Because of his ignorance of the nature of his condition and because pain is not a prominent early

symptom, he often does not seek medical advice for relief of the general depreciation of his visual function until the disease is well advanced. If apprized of the status of his eyes, it is difficult to convince him of the seriousness of his condition, even when he is earnestly advised that an operation is urgently indicated for the preservation of what vision he has and to prevent or retard the development of total blindness. All too frequently these people become the victims of itinerant glass-fitters and others who, though they are licensed to fit glasses, because of the lack of special medical training are not qualified to recognize the disease with which they are confronted. When vision can not further be improved by glasses, if the patient is then referred for special care the case is well-nigh hopeless of improvement or even staying by the use of any means known to ophthalmology.

Glaucoma simplex should be considered by every physician as part and parcel of the general practice of medicine, and its diagnosis, or a well-grounded suspicion of its presence, should be readily entertained when the following symptoms and signs, named in the order of their prominence, are present in a person from the 4th decade of life onward.

Symptoms.—Glimmering of vision, ill-sustained ability to read without discomfort with eyes heretofore functionally capable, halos around a light when facing a single light, occasionally a brief stabbing pain in one or both eyes, a dull ache within the eyeball; more often pain in the temple, cheek, or brow, slow but progressive depreciation of vision, narrowing of the visual fields.

Signs.—With a history of recent frequent changes to stronger and stronger glasses; a dilated immobile pupil, a shallow anterior chamber as if the iris were impinging upon the posterior surface of the cornea, slight injection of the scleral blood vessels at the sclerocorneal junction, increased intraocular tension, a deep optic cup with the vessels bending over its edge and lost to view beneath the rim of the cup, pallor of the nerve head and bilateral involvement in the chronic simple type.

The symptoms given are all subjective. The signs listed can be readily ascertained by a careful survey of the eyes in good artificial or daylight for the external, and an ophthalmoscope will show the external, as well as the internal, findings. A gross analysis of the visual fields can be gotten by the confrontation test, an accurate analysis by a modification of the Bjerrum screen. This can be a black curtain 40 inches square with a white object

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

a half-inch in diameter at its center for the patient to fixate while being tested. The curtain may be hung on a well-lighted wall in the office. This, with a white test object one-sixth inch in diameter on the end of a small black rod or wire, is all that is required for rapid work and a tentative diagnosis. The patient in this test is placed 40 inches from the curtain and the eye not being tested is occluded. The intraocular tension can be fairly accurately estimated by palpating each globe separately while the patient sits and looks down, his head erect, and fixes his gaze on his hands which are folded in his lap. This makes the upper portion of the globe present beneath the supraorbital arch and the balls of the two index fingers can palpate the body of the globe with facility while the hands are supported by the other fingers resting lightly on the brow and temporal area. Constant and equal pressure with the two fingers should not be made; but palpation alternately with one and then the other finger, both fingers being applied to the globe throughout the test.

This requires practice. If the test is correctly done, and on every patient presenting for a general physical examination, one becomes capable of detecting as little as eight to 10 millimeters of increased pressure. An intraocular tension of 35 to 40 millimeters or more can be readily detected by practice. This entire procedure, as outlined, requires no more than five or six minutes, no equipment but that which can be had for a trifle, the ophthalmoscope excepted, and practice in the use of the ophthalmoscope facilitates the solution of many serious medical diagnostic problems in addition to glaucoma.

Use of the ophthalmoscope should be a part of the daily practice of every physician, just as the use of the blood-pressure apparatus and the stethoscope should be a part of the daily work of every oculist. A brief examination of the eyes with the ophthalmoscope in routine practice aids the examiner in making many a diagnosis in general systemic diseases; and of itself brings to light many early, undetected cases of glaucoma. It is unfortunate that scarcely one physician in five uses an ophthalmoscope at all, when any doctor may have for his patients, at a small expenditure of money and time, the great benefits to be derived from the use of this valuable instrument.

Chronic congestive and acute glaucoma can be difficult to diagnose. Suffice it to say that in such a case the sclera is highly injected, the cornea hazy, the pupil dilated and fixed, vision markedly depreciated, the globe hard and exquisitely painful. Frequent are nausea, vomiting and severe shock. A differential diagnosis from acute iritis presents the most important problem. Nausea, vomiting and shock may suggest an intra-

abdominal catastrophe. In potential glaucoma patients an acute attack is not infrequently precipitated by some severe emotional shock as from a like cause an acute thyrotoxicosis may be produced. Likewise the oral administration of atropine and its derivatives to the middle-aged and aged and those of a like age with hypertension, because of its mydriatic effect on the pupil, may precipitate a latent glaucoma.

The dilated and immobile pupil of glaucoma suggests a cerebral new growth or late syphilis. The fundus picture may be confused with optic nerve atrophy, physiological cupping of the disc, and high myopia. It is not infrequently mistaken for incipient cataract by the uninitiated and by him the patient is advised to wait until the cataract is "ripe" before anything is done. In any kind of glaucoma the use of atropine, cocaine or other mydriatic may be disastrous.

In conclusion:

The diagnosis of glaucoma is an item in the field of general medicine. Such cases make a not inconsiderable part of the practice of every busy physician. It is through his thoroughness that many of these unfortunate people can have the threatening condition of their eyes detected, and be directed in the path of light; while a cursory examination with a mistaken diagnosis may give the patient a false sense of security with disastrous results. By maintaining in his daily practice the consciousness of the existence of this menace to vision, every doctor can be instrumental in saving annually one or more patients with incipient glaucoma from ultimate blindness. Surely this is an accomplishment worthy of the effort required. It is a problem in preventive medicine, as in other fields of medicine, a challenge to our knowledge and effort. Traquair says: "We must regard glaucoma as a disease of the patient and not a disease of the eye."

A person blind is devoid of sight; if vision is 10 per cent of normal he is economically and industrially blind. His ultimate status is the same whether his visual deficiency be the result of injury or of disease.

If blindness from glaucoma is to be prevented, the disease condition must be detected and treated in its incipency, and every practicing physician should serve as a means to that end, utilizing the same knowledge and interest that he uses in preventing other diseases destructive of our economic and social welfare.

HYPOTHYROIDISM.—Of 42 children with h. seen in past 5 years, most were clinical pictures of cretinism or juvenile h. Elaborate biochemical studies only confirmed already clearcut diagnoses.—Wilkins & Fleischmann, in *Jl. A. M. A.*

What is Cancer, and Do We Need to Fear It?*

PAUL KIMMELSTIEL, M.D., Charlotte

THE public has become more concerned about cancer in recent years than ever before. It is true that the medical profession has greatly contributed toward the enlistment of this wholesome interest. Doctors have done that and are doing it, purposely, because they have realized that under the present circumstances an effective battle against this dreadful disease can be fought only if the public, itself, does its part in bringing about early recognition of the condition.

It seems as if the number of persons who die from cancer steadily increases. This, although statistically true, should not arouse fear. We must bear in mind that this, like all statistical recordings, must be carefully analyzed before it can be interpreted properly. Cancer, you must know, is broadly speaking a disease of old age. True, it does occur in the young, but relatively rarely, and the incidence increases with increasing age. Modern hygiene and medicine have prolonged considerably the average lifetime. We should therefore not be surprised that those who would formerly have died from diseases, now preventable or curable, live long enough to experience cancer they would not have had had they died in early life from an epidemic disease, a ruptured appendix, pneumonia or other condition which we now are so much better able to prevent or cure. Furthermore, with increasing medical knowledge and improvement of diagnostic methods cancer is recognized now, more often than formerly, to be the cause of death. The statistical truth of increasing incidence of cancer must therefore not discourage us.

In spite of the tremendous efforts which are being made in many research institutes throughout the world, in spite of surprising, and indeed promising, results which have been achieved, we do not fully understand the cause of cancer. However, we have learned to recognize cancer as a distinct group of ailments, and we have learned some of the ways and means by which cancer kills us. The knowledge of the strength and the strategy of our enemy wins half our battle.

What is cancer? How does it affect the body?

When you think seriously about the structure of your own body, with all its various organs and parts and tissues, you find it hard to grasp how miraculously well the different structures with their millions of tiny cells are organized. The cells are specialized in groups and communities, and detailed to certain functions. They all do their

work to the benefit of the body as a whole. They live and die for it all the time, and in return are supplied with water and food by the commonwealth through an intricate system of channels which we call vessels. At any time, however, and for some reason we do not know, this system of good-fellowship may break down in one of the communities, in one of our organs. A small group of laboring cells begins to revolt. At first you can hardly distinguish them from their fellow-workers, and only a trained eye may recognize them under the microscope; but soon they begin to multiply, to form their own little colony within their community and then they are identified more easily. Under the microscope they are aggressive-looking fellows; their colony is not in good order; it is disorganized, anarchistic. The colony grows rapidly and entirely out of proportion to the rate of growth of the normal cells of their community. They have lost discipline, and no longer share in the burden of work which the commonwealth of cells must have for its existence to be sustained. Just like human aggressors, they disregard boundaries and break into neighboring countries, destroying and looting as they advance. And then through the channels of transportation, the vessels, they send out a small group of pioneers into remote countries, into organs far distant from the original site of growth. Here again the tiny colony begins to expand and invade. In short, cancer acts like a parasite which takes shelter in our body and lives at our expense. It eats at our table and replies with poison. It is true that with the final death of the host the parasite will also die; but in order to save the host we have to get up early. We cannot wait until the parasite has already begun to invade its neighborhood or send out its pioneers to other parts of the body.

If we knew what makes some of our good fellow-citizen cells suddenly change into aggressors we would probably know how to prevent it. But we must face the fact that we can cure cancer only by complete eradication after we have recognized its existence. The only means at our disposal at the present time are surgical excision, x-ray and radium treatment. It is clear, however, that the chance of curing cancer will be less and less, the longer the time the parasite has been allowed to establish itself and do its destructive work.

I can give you some striking examples of the results of treatment in early- and late-recognized

*Read on Station WBT, Charlotte, on May 3rd, in behalf of the Women's Auxiliary of the Field Army for Cancer Control.

cancers. Of cases of cancer of the breast recognized and treated early, 75 per cent have been cured, at least over a period of five years. Of those recognized late only 20 per cent have been cured. If cancer of the womb is diagnosed early 80 per cent of the cases are curable; if recognized late only 10 per cent. And so on down the line. The main difficulty in early recognition of cancer lies in the fact that our parasite, if established in inner organs, may gain considerable size and strength of aggression without causing much discomfort or otherwise making its presence known. Sometimes the growth is discovered accidentally by feeling a lump somewhere in the body. All should bear in mind that cancer is a growth, a vegetation, and at that a surreptitious aggressor. Wherever you can feel a lump, for instance in the breast, though that lump may not be sore, have it examined to rule out the possibility of cancerous growth. Don't misunderstand me, not all lumps are cancers; but your physician is the person to say whether or not a lump is a cancer, and your own best interests demand that you take your problem to your physician immediately.

Cancer destroys the surrounding tissue and eats into the vessels. You can see that this will often be the cause of minor bleedings. Do not dismiss repeated minor bleedings from your mind, wherever they may come from, until you have found out just what is causing them. They are often the earliest, the only, sign of cancer, particularly of cancer of the womb. Irregular bleeding or intermittent spotting should be given your full attention.

Quite often the parasite we nourish somewhere in our body will grow to considerable size without causing any local disturbance. General discomfort, weakness, fatigue, loss of weight, anemia or vague complaints of indigestion may be the only clues, and most of these symptoms are late in appearing. Although it may seem to you that such a general effect on your body may already indicate advanced progression of your enemy, it may not be too late to be cured. Don't be ashamed to consult your doctor about such, as they may seem to you, trivial and vague complaints. If he tells you that there is nothing seriously wrong, well and good; you have not lost the chance of an early diagnosis. If he finds that you have very early cancer, you are almost certainly saved from months of suffering in invalidism terminated by death—saved for ten, twenty, thirty years of happiness and usefulness.

With all these talks the medical profession may seemingly have implanted an unnecessary fear of cancer in some minds; but certain cure of cancer can be accomplished only in its earliest phase of growth, at a time when its existence is not yet obvious to your eyes. Cancer fear—not irrational

terror, but wholesome dread—cannot be avoided; in fact it is a part of our cancer defense program.

EASING CONVALESCENCE

(E. K. Clarke, Minneapolis, in *Jl. Lancet*, May)

Problems of convalescence can be greatly reduced if there is conscious planning to improve the mental attitude of the patient during this time. This article deals with the management of children during convalescence, but the fundamental principles are equally applicable to adults.

It requires a personal experience of prolonged illness to appreciate how long a day can be for an unoccupied invalid. Mealtimes and the taking of temperature represent important breaks in the monotony. Convalescence will become less tedious if there is a definite plan to follow that dispels boredom.

The idle child is prone to be discontented. The constant demand for attention from mother or nurse tries the patience and causes irritability, thus adding to the strain of care. A planned routine breaks up long, dull periods into short spells, each with a diversion.

Between breakfast and the morning bathing and tidying up—reading, drawing, cutting out pictures. After morning care—for the child who can be propped up in bed, a bed table useful for serving meals and as a work bench can be constructed for a small amount, stored in a small space, and used repeatedly. Soap carving, leather work, bead work on looms, rings created from the handles of discarded tooth brushes softened with acetone for ease in molding. Scrap-books, cutouts, paper weaving and card darning serve a useful purpose in keeping younger children contented.

Plan activity for a definite period, terminated before interest lags.

From mid-morning to noon books, picture puzzles, or games that can be played alone.

Rest in a darkened room for 1½ hours should be encouraged in early afternoon, followed by reading aloud and playing games. Planned radio programs should be fitted into the schedule.

The early evening should offer some diversion through such games as Chinese or regular checkers, dominoes, or simple card games that can be played quietly. During this time, members of the family who have been at school or work during the day can bring new faces and interest into the sick room.

For older children a wide array of interesting books can usually be suggested by the librarian of any public library. Even with adults, short stories that can be completed in about 20 minutes are usually preferred.

It is important that the patient not keep up his play for attention through making physical complaints. Haphazard, ill-defined routines during convalescence perpetuate bad mental attitudes that retard recovery.

GOUT—A FORGOTTEN DISEASE

(E. L. Tuohy, Duluth, in *Minn. Med.*, April)

Gout is practically as enigmatic as when Sydenham had it and described it. We cannot deny its familial tendency and constitutional background. Uric acid is deposited in the tissues in certain areas. Rich, fatty diets and alcohol (beer and ale) precipitate attacks. These attacks come in individuals with a certain background of gouty diathesis. The disease does not kill and is therefore lost, for the most part, to statistical enumerations. The x-rays offer little in the way of positive selective criteria. Colchicine as a therapeutic test in acute attacks is the most reliable diagnostic measure—more determinative than either hyperuricemia, the presence of aural tophi, or bursitis accumulations. Gout is a disease ideally suited to sharpen the physician's clinical acumen and judgment. Without these faculties it will be frequently overlooked.

The Roentgen Treatment of Cutaneous Epitheliomas *

ALLEN BAKER, M.D.—CHARLES H. PETERSON, M.D.

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Roanoke

IMPROVEMENTS in roentgen apparatus, together with a vast increase in our knowledge of the treatment of cancer in general during the past few years, have made it possible to cure practically all skin cancers. In spite of these facts about four thousand persons die each year from the disease. It then becomes obvious that many patients either do not seek treatment at all or are improperly treated when they do. The latter probably accounts for most of the deaths.

For purposes of brevity and simplicity, a discussion of lip and intraoral cancers, which require complicated and varied techniques, has been omitted.

The present-day treatment of any malignant growth, whether of the skin or other organs, consists of irradiation, or surgery, or a combination of the two. In a small percentage of cases of skin cancer both may be necessary and occasionally surgery alone may be preferable. However, the roentgen apparatus of today, with increased experience in its use, has practically eliminated the necessity of either surgery or radium. Patients frequently object to a surgical procedure, more often than not accompanied by poor cosmetic results, especially if the lesion is large. With radium, dosage is more difficult to estimate, treatment time is much longer, and the small amount of radium available in most institutions where the demand for it is great, make it uneconomical to use.

The great majority of skin cancers fall into one of three classifications: (1) basal-cell, (2) mixed, and (3) squamous-cell.

Success in the treatment of these lesions depends, as in any other disease, on accurate diagnosis, which can be obtained only by biopsy in all doubtful cases. It is not our practice to do biopsy on all small typical epitheliomas. While an occasional error may result from such practice, these do not in our opinion outweigh the disadvantages of additional expense and time consumed, particularly for those patients with meager finances who live at a great distance. One must not underestimate the value of a microscopic study of these lesions, but it is a mistake to rely entirely on the microscopic findings in determining the dosage to apply as the histology may vary from one area to

another. A section from one place may show only basal cells while from another squamous cells are found. Such a lesion would not be cured by a dose of radiation sufficient only to cure a basal-cell growth. In practice, therefore, a dose sufficient to destroy squamous cells; *i.e.*, 8, to 12 erythema doses, should be administered regardless of the biopsy findings.

Care should be used in obtaining a biopsy as the improper removal of tissue may cause a very malignant lesion to metastasize, thereby rendering a relatively simple lesion highly dangerous. Skin cancer, as is true in all cases of suspected malignancy, should receive a preoperative dose of roentgen therapy before tissue is removed. This procedure renders less viable any cells which might escape into the blood or lymph stream at the time of the operation. To further lessen the opportunity for metastases the electrosurgical knife is preferable to sharp incision, as this instrument destroys any cancer cells with which it comes in contact and seals blood and lymph spaces as it cuts, thereby decreasing the chances for malignant cells to enter the circulation.

It is well to emphasize that good surgery is preferable to poorly administered radiation and vice versa, as the successful management of any cancer depends upon adequate initial treatment. Recurrent cancer anywhere taxes the ingenuity of both surgeon and radiologist.

The quality of roentgen radiation employed in these cases is determined largely by the size and thickness of the lesion, its location and histological structure. No preestablished routine can be adhered to, as each case must be individualized and techniques may have to be modified from time to time during treatment.

It is possible, however, to describe in a general way the treatment technique employed in the different types of epitheliomas: Comparatively small lesions, those 2 cm. or less in diameter with little or no elevation, are given one massive dose of low voltage (100 Kv. P.) unfiltered x-ray, usually between 4000 and 6000 roentgen units. Larger lesions with little or no elevation are given the same quality of radiation and approximately the same total dose, but the dose is fractionated into three or four treatments given at intervals of two or

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

three days. The divided-dose technique permits more rapid recovery of, and less permanent damage to, normal structures—a factor of great importance when any large area is heavily radiated.

Large thick carcinomas are treated by a combination of filtered and unfiltered rays, with voltages varying between 100 Kv. P. and 200 Kv. P. and filter between zero and 2 mm. cu. The average daily dose is 300 to 400 *r* administered daily or every second day for a total of 4000 to 6000 *r* and completed within a period of three weeks.

Cancer involving cartilage is a much more dangerous lesion and more difficult to treat. This tissue does not tolerate radiation well, especially soft low-voltage rays, and cancer cells imbedded in cartilage are more radioresistant. Therefore great care must be exercised to obtain a permanent cure with good cosmetic results. Roentgen rays generated at 220 Kv. P. and filtered through the equivalent of 2 mm. cu. are employed in the treatment of these cases. Daily doses of 300 to 400 roentgen units are given until a total of 4500 to 6000 *r* is reached. This method reduces the chances of cartilage necrosis and gives much better cosmetic results.

Proper screening is as essential as adequate dosage. Too-close screening leaves viable cancer cells in the margins, and is certain to result in recurrences, while too-wide margins may cause unnecessary destruction of healthy tissue. In small lesions a margin of at least $\frac{1}{2}$ to 1 cm. should be included and in the larger ones up to 2 cm.

It can be seen that many factors must be reckoned with in the care of these cases if permanent cures with good cosmetic results are to be expected. Success depends almost entirely upon adequate initial treatment as recurrent lesions are radiation-resistant and usually appear in an area already greatly damaged by previous radiation. We then have a lesion requiring much larger doses in an area which will tolerate little, if any, more radiation without the danger of radionecrosis. Wide surgical excision is probably preferable in many of the recurrences but this method leaves a wound difficult to heal, prone to subsequent deformity.

If, in the management of these patients, one keeps in mind the most frequent causes of failure, many of the mistakes we have made ourselves or have seen made by others can be avoided. At the head of the list should be placed inadequate initial treatment, whether it be radiation, surgery, or a combination of the two. We see many cases where total dosage has been ample but fractionated over so long a period of time that tumor cells have had an opportunity to recover between treatments and finally become radiation-resistant. In most of

these lesions the total treatment should be administered within a period of three weeks or less. Any cancer which does not receive within a period of six weeks sufficient radiation to destroy it becomes extremely dangerous and much more difficult to cure.

Too-close screening; *i.e.*, failure to include a wide enough margin of healthy tissue in the field of radiation, probably ranks second in importance as a cause of failure. In these instances recurrences develop at the margins of the lesion.

A less frequent, but none the less important, cause of failure is the use of improper quality of radiation. A dose of low-voltage radiation sufficient to cure a thin lesion may fail entirely to cure a thick one of the same diameter, as the tumor mass itself filters out too large a percentage of the rays before they reach the base of the growth; whereas the same number of roentgens generated by higher voltages and moderately filtered would be ample to produce a cure.

In conclusion, we have outlined in a general way the methods of roentgen therapy which have proved satisfactory to us in the management of skin cancer. No claims are made for originality of the methods of treatment described and it is recognized that other methods or variations of the techniques mentioned may produce results as gratifying as those illustrated here. It is obviously impossible to describe in detail the treatment of each different type of epithelioma, as it is often necessary to substitute one regimen for another after treatment is begun. The most frequent and important causes of failure have also been mentioned. It should be emphasized again that success in the care of skin cancer, as in all forms of malignancy, depends upon adequate initial treatment.

Discussion was with that of paper of Dr. Clarkson, and will be published with Dr. Clarkson's paper.

PRIMARY OVARIAN CANCER

(J. E. Hall, Brooklyn, in *The Brooklyn Hosp. J.*, April)

Primary ovarian cancer is one of the most fatal forms—mortality 90%. In view of the fact that over 80% of the patients were women over 40 years of age and because the disease is practically symptomless until it is well advanced, every woman over 40 should have a pelvic examination every 6 months. This procedure probably would enable us to discover a much higher percentage of these tumors before they become so far advanced. Furthermore, other early lesions of the genital tract would be found.

The procedure of choice, as soon as diagnosis is made, would seem to be complete removal of the pelvic organs, then extensive postoperative roentgen therapy. Under such a plan of treatment in early ovarian cancer, before the onset of pain and abdominal enlargement—which are late symptoms in the disease—the survival rate would be greatly increased.

CASE REPORT

ALLERGIC REACTION TO SILVER NITRATE

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QUITE recently the chance to observe two cases with the same unusual reaction to silver nitrate presented itself.

Case 1.—A white woman of 52 in good health, past history irrelevant, came to the office with an acute tonsillar pharyngitis. Noticing that I intended to mop her throat she told me that she had been warned in the past by another doctor, not to allow anyone to use silver nitrate on her, as it caused her to have asthma attacks. She explained that the local application of this preparation was the only thing that had ever caused such attacks and so far as she knew she had no other allergic reactions. I thought that an attack such as she mentioned, might possibly have been produced by some silver nitrate having dropped into her larynx. For psychological reasons I misled her into believing I was going to use another drug, but did apply a 1-per cent solution to her tonsils. To my surprise the patient immediately was seized with a severe attack of asthma which required an injection of adrenalin.

Case 2.—A white man of 55 who could not recall having ever visited a doctor came with a sub-acute tonsillitis for which 12-per cent silver nitrate was applied locally. Immediately upon touching his throat he was seized with a severe attack of bronchial asthma with typical expiratory stridor, which lasted 15 minutes. This man had not had asthmatic attacks before. It is of interest in both these cases of bronchial asthma that neither had a personal or family history of allergy, and their attacks were occasioned by the use of silver nitrate only.

Allergies due to local applications or internal use of divers drugs are not infrequent. Local treatment to the rhinopharyngeal tract and to the eyes is especially noted for producing allergic reactions. In a study of literature, however, no like cases were found, although the local application of silver nitrate is so general. In a round-table conference on allergy, Tuft¹ mentions "shock organs which after contact with a specific allergen become sensitized, thus resulting in one of the clinical manifestations of allergy." These shock organs are not limited to any tissue of the body. He believes that a patient with hayfever has a potential shock organ in the bronchial tubes. Glover,¹ reporting on ocular allergies at the same conference mentioned, as do Black² and Weiner,³ drug allergies of the eyes due to atropine, eserine, butyn etc., and that silver nitrate rarely gives a reaction, and what re-

action there is appeared to be "a purely corrosive response." Applebaum⁴ reports two cases with atropine blepharo-conjunctivitis, both patients sensitive to other cycloplegics. After surgically clearing their ethmoid sinuses both became desensitized. Hurlbut⁵ even recommends as one of the treatments for allergy a 10-per cent solution of silver nitrate as a cauterizing agent.

A review of the literature is quite confusing. There can, however, be no doubt that abnormalities of the upper respiratory tract are directly or indirectly related to asthmatic attacks. Sinus diseases, septum deviations, polyps etc. have long been considered responsible for allergic reactions. Dietary and environmental conditions, as well as endocrinological ones, are factors which have to be considered. However, none of these theories explains certain drug reactions which appear quite suddenly and with no evident reason.

SUMMARY

Two cases are reported in which the local application of nitrate of silver in the throat produced immediate attacks of bronchial asthma, though neither gave any history of such asthma, or of hayfever or any other allergic condition.

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SYNTROPAN IN PARKINSONISM.

(N. S. Schlenker and B. J. Alpers, Phila., in *Ann. N. Y. Acad. Sci.*, Mech.)

Recently it has been generally conceded that atropine and the closely related belladonna preparations constitute the most effective forms of symptomatic treatment available at the present time.

A group of 16 patients having Parkinson's disease were treated by means of syntropan. The maximum therapeutic dose has been determined to be 2400 mg. daily. Of 14 patients who were potentially capable of reaching this dose, in 10 mild or moderate symptomatic relief was obtained without the development of any toxic manifestations. From these results it would appear that syntropan is useful in many of those cases where atropine cannot be administered because of toxic symptoms.

THE USE OF A. T. 10 IN CHRONIC TETANY

(E. J. Ryan & E. P. McCullagh, Cleveland, Ohio, in *Ohio Med. J.*, May)

In tetany A. T. 10 is often more effective than other method of treatment. Danger of resultant hypercalcemia makes necessary frequent serum calcium and phosphorous readings during the period of initial control.

The concurrent use of large doses of calcium by mouth increases the efficacy of A. T. 10 and lessens the amount required. Only rarely is it necessary to initiate treatment with more than 2 c.c. per day and maintenance levels average 0.5 c.c. to 0.75 c.c. on alternate days.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.



DR. HENRY BATTLE MARRIOTT

FOR at least two hours on Saturday, May 24th, I behaved just as if time were not a reality but only a sort of linguistic nuisance. As I was passing through Battleboro, in Edgecombe County, in North Carolina, I stopped for communion and reminiscence with my friend, Dr. Henry Battle Marriott. Some cynic has said that being bored is only being conscious of time. But one can have no realization of time while one is with Dr. Marriott. He has lived a life of such usefulness to his fellow-mortals, and, in consequence, of such satisfaction to his own soul, that he has been generally unmindful even of the existence of time.

There is a story in the family that Dr. Marriott finally emerged from the home, where he had been making a professional call for at least two hours, and remarked to his two little children in the buggy that the sick man had malaria. But his little son asked if he had been waiting for the sick man to have a chill. "No, son", the father replied,

"but no doctor can instantly tell what is the matter with a sick person."

That remark of Dr. Marriott, made many years ago to two of his little children as they were accompanying him on his professional rounds, epitomized his conception of his duty to his patients. Not only his own two restless little children, sitting impatiently in the buggy and holding the horse, must wait until their father had satisfied his medical conscience about his patient's condition; not only must his own little children, eager to be on the way, await their father's return, but all others, too, must wait, and time itself must be forgotten, until Dr. Marriott could find out what was the matter with the sick man.

From a medical father he had inherited a sense of his professional duty, for that sacred calling he had been trained, and to that high purpose he had made his avowal of life-service. Though his step is not so springy, nor his gait so steady as in distant days, his eyes twinkle, he laughs heartily, and he is without self-reproach and without fear; for he has been true to himself and he has given himself generously to his fellow-man.

Some of the events associated with my incursion into my native state tended to remind me of the mutations of life. The journey down to Rocky Mount was made hurriedly in weather all but intolerably hot. In the evening I spoke some words to a group of graduating nurses, young, vital, eager, quick and enthusiastic, and ready for service in peace or in war. And before midnight had come the heat had gone and the breezes were delightful. As I returned on the next day I enjoyed the coolness, and the retrogression with Dr. Marriott into other days.

Only the past can teach. The present affords opportunity for correction and for testing, and the future encourages hope and aspiration. But only the past offers instruction. I sat at the feet of Dr. Marriott. I had been stimulated by the buoyant enthusiasm of the young nurses. Youth for aspiration and for action; age for contemplation and for retrospection. How balancing and how stabilizing the two are—youth and age—the same thing, merely either the more or the less. Youth is eager to step forward into the unknown, but the beckoning, future; age would go back again and again into that past out of which it, when a youth, was so eager to emerge.

There is no total acceptance of things as they are. Youth would have them now as they are to be; age would have things once again as they once were. It is well—well that youth is youth and age is age. One chews the food of sustenance; the other the cud of rumination.

My associations with many of the physicians of the Carolinas and Virginia during the years of

my secretaryship of the Tri-State Medical Association were highly agreeable. Dr. Marriott reminded me that I had induced him and the late Dr. Cyrus Thompson to come into the Association at the same time. He and Dr. Thompson, though both eastern Carolinians, had never met, and they became devoted friends. Dr. Marriott still chuckles about some of the Thompsonian stories as he did when he heard Dr. Thompson tell them.

But Dr. Marriott remembers with most appreciation the progress that medicine has made since he, still a boy only twenty years of age, but a medical graduate, visited his first patient. Born in Nash County, in 1863, the same discordant year, by the way, in which Jack DaCosta was born, he was graduated in medicine by the University of Maryland in 1883. Since that distant day Dr. Marriott has devoted himself to the practice of medicine at Battleboro and in the parts 'round about of Edgecombe and of Nash. While he was still scarcely grown the responsibilities of a general practitioner came upon him. In his early years of practice typhoid fever was prevalent; diphtheria was unmanageable and often fatal; appendicitis was beginning to be heard of; the term allergy had not come into use and vitamins were not known. Most of the tuberculous died, and malaria was a scourge. The cause of syphilis was not known. The x-rays had not been discovered and radium had not been added to the list of known elements. There were few hospitals in North Carolina when Dr. Marriott began his practice. He tells of some astounding recoveries from grave conditions necessitating operations in the homes. Now the automobile or the ambulance can convey most patients from their homes to nearby hospitals. In his early days the roads were of dust in summer and of mud in winter and travel was by horseback, gig or buggy. But that method of travel was not objectionable to him. He had grown up with horses; they were his companions and his friends, and he often kept racehorses. Only recently he surprised his household and perhaps himself by deciding all at once to go again to the races at Saratoga.

Before he was twenty-one he was a medical licentiate; before he was twenty-four he had married Miss Emily Phippen, of Tarboro, and she is still sprightly and alert, though the mother of five, the grandmother of ten, and the great grandmother of two!

Few intellectual families are long able to retain their supremacy. The Battle family constitutes an exception. High intelligence and wholesome character are still assets of most of them. Dr. Marriott's mother was a member of that vigorous family. Though her husband, Dr. Robert Henry Marriott, died rather young, she reared and educated

the children and had brought one son into medicine before he was fully grown. Dr. Cyrus Thompson once told me that he was certain the three things could be found in the travelling bag of every man-member of the Battle family that belong in the luggage of every gentleman—a copy of the Book of Common Prayer, a copy of Bacon's Essays, and a small flask of good whiskey. I assured Dr. Marriott that two toddies each day will do him only good.

Physician, husband, father, citizen, large farmer, generous-hearted lover of his fellow-man, Dr. Henry Battle Marriott — seventy-eight, wise, kindly, genial, courageous. His wife, his four daughters, his son, his grandchildren and his great grandchildren thank God for him every day of their lives. Some day when I can escape from the dominance of old King Chronos I am going again to Battleboro and learn of Dr. Marriott what human nature is and something of that high art with which the family doctor deals with it.

In the exchange of the family doctor for the specialist the sick man has suffered a grievous loss and society a dreadful deprivation. I cannot think of the wise and kindly old village doctor down in Battleboro without recalling the lines of Wordsworth:

"His little, nameless, unremembered acts,
Of kindness and of love".

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE TREATMENT OF INGESTED FOREIGN BODY

EXCEPT in infants and in the insane the ingestion of foreign bodies is practically never intentional. Hair balls in the stomach of the insane sometimes reach enormous proportions and may contain an unbelievable variety and number of foreign bodies. Fish-bone is the most commonly ingested foreign body. Stomach secretion of normal acidity will, as a rule, digest fish-bone before it reaches the intestine. It is surprising that most needles, pins, pieces of glass, tacks, bones and other sharp-pointed rigid objects, by becoming incorporated in fecal masses, pass through the intestinal tract without causing symptoms.

When the physician is consulted soon after a foreign body has been swallowed, particularly if the patient is a child and the body is of bone or of metal, x-rays should be used to be sure if the body has been swallowed. The mother, unable to find a misplaced safety-pin, thinks the baby has swallowed it. As an ingested pin may be identified in the plate its relative position in subsequent pictures will show what progress it has made in the intestine. Instead of prescribing potatoes after a for-

foreign body has been swallowed the patient's ordinary diet should be continued. If the foreign body is sharp bulky foods do no good and if it is large they tend to cause obstruction. *Laxatives should never be given.*

The treatment should be one of watchful expectancy. Complications making surgical intervention necessary are perforation and obstruction.

It is estimated that only one per cent of ingested foreign bodies cause perforation; even this incidence is too high, however, for the physician is not even consulted about the ingestion of most bodies. The tendency to perforation is greater in blind segments like the appendix and diverticula, in loops of intestine incarcerated in irreducible hernias.

The symptoms are those of perforation from any cause—pain, tenderness, fever, leucytosis. If localization of infection occurs an abscess forms or an inflammatory mass without suppuration develops. Sometimes the foreign body migrates and may cause an abscess far removed from the site of perforation. A toothpick has been found in a liver abscess.

The treatment is entirely surgical.

Because of its relatively fixed position and small lumen obstruction from a foreign body is more apt to take place in the duodenum. Vomiting is an early and a persistent symptom. If the site of obstruction is high distention is confined to the epigastrium or may be entirely wanting. If relief is not obtained by continuous decompression of the stomach through the Levine tube immediate operation should be done for the relief of the obstruction.

CARDIOLOGY

C. M. GILMORE, M.D., *Editor*, Greensboro, N. C.

A NEW MERCURIAL DIURETIC FOR ORAL ADMINISTRATION

ALTHOUGH parenteral administration of mercurial diuretics always has been, and probably always will be the best, oral administration is effective, and in chronic cases and those where the patient lives far from a physician, it is much more practicable. Calomel is unsatisfactory, as frequently mercurial poisoning ensues before enough mercury is in the kidneys to promote diuresis. Salyrgan and mercupurin by mouth are worthless.

In the *American Journal of Heart Disease* for January, Batterman *et al.* report on the value of a new mercurial not yet on the market. It is salyrgan combined with theophylline, which latter drug apparently makes the mercury both effective and relatively non-toxic. The dosage is 5 tablets, each of which contains 80 milligrams of salyrgan (30 mgms. mercury) given usually every 3 to 5 days.

In a group of 48 patients, stabilized on rest, digitalis, ammonium chloride and restricted fluid intake, 29 were given the tablets, 24 salyrgan-theophylline intravenously, and 30 mercupurin intravenously. Mercupurin suppositories were not used, as by rectum has been shown to be inferior to by vein, and frequently productive of rectal irritation.

A loss of three pounds or more within 48 hours was considered a good effect. The parenteral preparations were more consistently effective, working in 90 to 95 per cent of the cases; the oral preparation gave satisfactory results in 72 per cent of the cases; suppositories gave about 50 to 60 per cent good results. In some patients a good response was not obtained on first administration, but was obtained on the next; and few patients were consistently refractive to the tablets. The onset and the peak of the diuresis was usually a little later with the tablets, but was generally complete within 24 hours. Two patients had a diarrhea and one some epigastric discomfort, but none of them was so bothered on subsequent administrations. There were no signs in any patient of renal irritation.

There is available, then, a fourth satisfactory method of obtaining the diuretic effect of mercury. It is not recommended that these tablets be used routinely, but they should prove very convenient where a patient chronically ill needs a mercurial diuretic at regular, frequent intervals, and in those patients who are unable to report to a doctor frequently.

PROCTOLOGY

RUSSELL VON L. BUXTON, M.D., *Editor*, Newport News, Va.

IN PRESENTING a department of Anorectal Diseases, the *Journal of Southern Medicine & Surgery* is keeping abreast of the times, and no apology is being offered for this department. In no branch of medicine can neglect lead to more disastrous results and in no other branch of medicine is diagnosis so easy, if a few fundamental rules are followed. The importance of including a thorough rectal examination in the course of any general physical examination, and the necessity for examination before advising a patient who presents himself with complaint referable to the lower bowel, need to be kept constantly in the front of the mind.

The examination of the "itching touch hole" (Stokes) should be undertaken with gravity and with proper appreciation for the feelings of the patient. For male patients the knee chest position on the examining table provides best visibility and makes possible an adequate digital examination. For women, the Sims position is less embarrassing and will suffice for an ordinary rectal examination. The Sims position should, also, be used for very ill

patients. A good light is a necessity, and inspection of the area is first done. Any changes in color of skin or mucosa, in shape or conformity should be noted. A digital examination should determine the degree of spasticity of the sphincter, the amount of tenderness at the anal margin and the presence or absence of masses in the rectum. Following digital examination, it is well to insert a small anoscope into the rectum so that any changes of the mucosa at the anal margin may be noted. While proctoscopy is not difficult, it is best left to those physicians who have had experience in the use of the proctoscope. Familiarity with the appearance of pathological lesions which may be present in the bowel mucosa is essential to proper diagnosis.

During all phases of a rectal examination particular search must be made for changes in the mucosa, and any growths or abnormal discharge. A smear for *Endamoeba histolytica* should be made routinely, as the diagnosis is often missed and symptomless cases are not rare. If an abnormal quantity of mucus is found to be present, or if blood is discovered and its source cannot be ascertained, proctoscopic and roentgenological examinations should be insisted upon. It seems needless to add that a portion of any growth that may be discovered should be removed and sent to the pathological laboratory for section and microscopic examination. At the termination of a rectal examination it is often worthwhile to insert into the rectum a small amount of an anesthetic ointment, such as nupercainol or hasacaine.

After the examination is completed, the patient should be allowed to dress, and then should be acquainted with the findings so that if further examination or treatment is indicated, plans for it may be made immediately.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

SOME PROBLEMS INVOLVED IN SELECTING AND REARING ADOPTED CHILDREN

Most family doctors have at some time the responsibility of advising childless couples as to whether or not they shall adopt children, and as to the child to be chosen. A good many doctors have the responsibility of deciding as to the suitability of certain couples for the role of adoptive parents.

The psychiatrist sees and treats enough adopted children in their late teens and early twenties to perceive a number of ordinarily unrecognized factors which should play a decisive part in the adoption of the child and his subsequent management. An essay on this subject by a psychiatrist¹ of

large experience in this field is given in substance.

Few married couples consider adopting a child in the absence of reasons which prevent them from having a child of their own, chief of which is sterility in one of them—due to maldevelopment, surgical removal of a generative organ, or natural or artificial menopause from surgery, x-ray or disease. The generative organs may seem to be normal, but conception does not occur, even though no contraceptive measures are used. Not infrequently a childless wife becomes pregnant some time after adopting a child, although the adoption did not take place until the couple were thoroughly convinced conception was impossible; and then the thought comes up that unconscious opposition to childbearing might have been responsible, and that this unconscious opposition was somehow overcome by the experience of adopting and taking care of a child. Conscious opposition is attributed to convictions that they cannot afford children, that they do not want to have their social life and freedom from responsibility interfered with; even active antagonism to children. After some years may come realization of the need for a child to make a home, or a growing feeling that the marriage is nearing the rocks and that a child may avert this disaster. The unconscious opposition, however, has not changed and still operates to prevent pregnancy.

That strong opposition still lingers may be manifested by prolonged indecision as to just when they will carry out the adoption or by rigid specifications as to what kind of child will be acceptable. Such a couple will not be likely to make good foster parents, for they will tend to reject the child if it does not come up to their expectations or if the previously feared loss of freedom and responsibility become burdensome.

Agencies have control of the situation and can rule against parents in whom searching interviews reveal the presence of strong negative feelings regarding children. The best foster parents, other factors being equal, are those couples in whom the sterility is organic, especially if they had and lost a child prior to the onset of the organic sterility, or those in whom the functional sterility exists in spite of sustained and consistent desire to have a child; provided the child is not desired merely to preserve a shaky marriage.

Requiring that the child be "a brown-haired, blue-eyed boy aged two and one-half with dimples in his cheeks" is often evidence of the rigid conditions on which they reluctantly lifted their boycott on all children; that a child not younger than a certain age may be evidence of the mother's repulsion regarding toilet training. These are not good omens for the success of the adoption.

Sometimes this specifying of exact characteris-

¹ J. R. P. Knight, in *Bull. Menninger Clinic*, Topeka, May.

tics is found to be the parents' wish to find a miniature image of one of them or some combinations of them. Parents who have their own blood children obtain this satisfaction through natural transmission of characteristics, and prospective foster parents may expect such returns. However, such insistence bodes ill, for the future as a child who may almost meet exact requirements at the time of his selection but who later develops characteristics which do not suit his new parents. A healthier attitude insists on a sound body, normal emotional and intellectual development, and freedom from bad inheritance.

The older the child at the time of adoption the surer one can be of his physical and mental status. On the other hand, if prospective parents do not adopt a child until he is four or five years of age, they have lost the chance to be the persons to whom he made his first emotional attachments. He comes to them with impressions already made of whatever adults took care of him, and he will make comparisons between his previous and his new "parents." Then, a child available for adoption at age four to five very likely has had a somewhat checkered career, usually before he came into the hands of the adoption agency. A final important risk is the one pertaining to the feelings of rejection and insecurity arising in the child at the disturbance of his previous home arrangements, even if his condition is greatly improved by the change; some attachments must be broken, and a child of four or five is acutely aware of such a change.

The best advice, probably, would be for the prospective parents to decide on adopting a very young baby whose background is well known to the agency, and whose careful examination reveals no abnormalities. It is likely that the child adopted after the age of two will be consciously aware of the change in his home situation.

It is a common occurrence for blood children to have phantasies that they are only adopted, and that their "own" parents are wonderfully kind or important people. Such phantasies often occur after the child has been denied something or punished or otherwise frustrated, and he may even express to his parents the idea that he is not their child or they would not treat him so badly; or after hearing that one of his schoolmates is adopted he may come home and ask what that means and then seek reassurance that he is not adopted. Without having had any basis for suspecting the fact, their adopted child may have similar phantasies or ask similar questions. To avoid this condition of continuous dread, and especially to avoid the eventuality that the child may discover the fact and confront his parents with it, with resultant loss of faith in them, it is much better to in-

form the child that he is adopted.

When should he be told? How? Probably as soon as he can comprehend the statement. Very likely he will forget all about it, but as he develops more understanding he should be told several more times until he thoroughly comprehends it. The first time, some time in the fourth year, he should be told a story about a daddy and mother who didn't have any children of their own and who looked and looked for the right one until they found a baby that just suited them; and then they took it home and loved it,—and so on, ending with the statement that they had gotten him in that way, too. Each time that the child is told, the same atmosphere should surround the telling, and never should the child be reminded that he is adopted when the parent is feeling angry at him. For a foster parent to say to an adopted child, "I'm sorry I ever adopted you" is as much of a crime as for a blood parent to say to a child, "I'm sorry you were ever born," or "I wish you were dead."

It is easy for him to reinterpret their disciplinary efforts as evidence that they do not and never have loved him, and that they have been mistreating him in a way his real parents would never have done; and with realization that they are not related to him comes the feeling that he owes them no blood allegiance, and his resentments can expand into ill-concealed or open hostility and defiance.

Every parent with several children realizes that there are countless times when a child is annoying in small ways, and a considerable number of times when the child's perverse or antisocial behavior is alarming. The child's sexual activities may be disturbing or his untruthfulness or dishonesty in matters of money or property may arouse concern. In blood parents such misbehavior does not ordinarily arouse any alarming thoughts about bad inheritance. With adoptive parents, however, the behavior of their adopted child is due to bad inheritance the idea may not be so unwelcome, for it is a convenient method of sparing themselves any feeling of guilt at not having brought him up better and at their own anger about it. So these foster parents, discussing between themselves this supposed "outcropping" of bad inheritance, may decide that strenuous remedial measures are indicated.

There are far more demands for children to adopt than the agencies can fill. Pre-adoption considerations for prospective parents and adoption agency must include the factor of why the prospective parents want a child, why they have no child of their own, and what their real attitudes are about children. After the adoption has been effected, the parents have to be prepared for some

difficulties to be anticipated, especially the reactions in themselves and in the child to the knowledge that the child is not their own. They must tell the child early and often, always with pleasurable connotations, that he is adopted; they must be prepared to comprehend with tolerance the child's outbursts of hostility and his various perverse acts, realizing that all normal children exhibit these things. They must never express to the child in any way feelings of regret that they adopted him or attribute his misbehavior to his not being their own child; and they must even avoid thinking within themselves that his behavior is alien and attributable to inheritance. Forewarned in these respects, possessed of a natural tolerance and affection for children, there is no reason why foster parents may not successfully rear a child who is not their own.

The information Dr. Knight gives us may well enable any one of us to so advise as to cause wise decision in a matter vitally affecting the happiness of at least three persons. It is worthy of careful study.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

THE PHYSICAL EXAMINATION IN PULMONARY TUBERCULOSIS

THE STETHOSCOPE was introduced by Laennec in 1816, and foundation of modern physical diagnosis laid by him in 1819; then followed by the text on physical diagnosis by Austin Flint in 1856, which served for many years as the standard guide in diagnosis of pulmonary diseases.

Laennec understood the role of scar tissue in healing in tuberculosis. He recognized the latency of the disease, and was the first to describe bronchiectasis. Austin Flint introduced the term, broncho-vesicular breathing, and the recordings of his physical examinations, written nearly one hundred years ago, are far more complete and more carefully done than those produced in our so-called modern era.

In the last few years the introduction and widespread use of the x-ray film in the diagnosis of diseases of the lungs has pushed physical diagnostic procedures into the background, and such procedures seem to be rather rapidly becoming a lost art.

The x-ray film in diagnosis is one of the most valuable additions to the medical armamentarium of all time. However, the physical examination still has an important place in the recognition of pulmonary disease; much necessary information which cannot be supplied by the x-ray film can be obtained by its means. The x-ray film is essential

to the diagnosis of primary tuberculous lesions, healed and active, in children and in young adults; since such infections seldom show symptoms, and only in the rarest instances do the lesions show any auscultatory evidences of disease. Often also the adult type of pulmonary tuberculosis in teen-age children gives no physical signs. The film is of great value also in visualizing small lesions difficult or impossible to detect by the physical examination, although the examination and the symptoms, if any, should be correlated with the films in arriving at the final diagnosis.

The three requisites of a proper physical examination: (1) mental concentration on the subject in hand, (2) allowance of sufficient time for the proper evaluation and recording of the physical signs and symptoms, and (3) an examining room as quiet and free from extraneous noises as possible. Some examiners claim that they are able by concentration to disregard outside noises during the performance of chest examinations, but the more quiet the examining room the better the results. Time must be allowed for baring the chest completely and for the work to be thoroughly done. It seems in order to emphasize a few findings. Noticeable prominence of the clavicles and sloping of the shoulders suggest apical contractions; contraction of the lower ribs, unilateral or bilateral pleural thickening and adhesions; deficiency of chest expansion, and expansion not equal on the two sides, lagging in expansion over certain areas—underlying pleural adhesions, or the formation of varying degrees of fibrosis in the lung itself; and the widening or narrowing of the intercostal spaces, or asymmetrical bulging of the ribs—these are a few of the visible indications of disease.

Percussion, though the least valuable method, properly performed will give much information. The light stroke is preferable. In consolidated areas, in addition to the dullness, the finger can detect a certain vibration in the percussed area, while over pleural effusions there is resistance without vibration. In atelectatic conditions the heart and mediastinum will be displaced toward the diseased side; in pleural effusions, toward the sound side. Varying degrees of impaired resonance can be detected over areas of thickened pleura and fibrotic areas in the lung itself, always remembering that in health the resonance over the right apex is always less than that over the left. Increase of tactile fremitus over consolidated areas and decrease to absence over pleural effusions serves well in many cases. Normally tactile fremitus over the right apex is slightly greater than over the left.

The most valuable method, auscultation, requires the utmost in mental concentration, and requires more or less continuous use for the making of the

fine distinctions required. The rale is the most widely recognized physical sign of pulmonary tuberculosis, but there are other stethoscopic evidences of the disease quite as important. To say the tuberculous rale is persistent does not mean that it is continuously present in a certain area. After cough it may disappear, to return later to the same area and be again recognized at a subsequent examination. Many times rales are present on ordinary or deep breathing, while in other cases they can be elicited only on inspiration following expiratory cough. No examination for pulmonary tuberculosis can be considered thorough without the use of the expiratory cough. Care is to be taken to note any areas of prolongation of expiration as compared to the normal 4-to-1 ratio of inspiration to expiration and of roughening of the inspiratory sound. There are grades of this change of ratio, from the broncho-vesicular breathing of Austin Flint to the bronchial type in which the expiratory sound may be longer than the inspiratory. These abnormal breath sounds indicate different degrees of condensation of pulmonary tissue by fibrotic change or consolidation.

Increase or decrease in volume of transmission of the whispered voice is of very great value. Whispered pectoriloquy is usually distinctive of cavity formation, although it may be present over dense, rather extensive areas of consolidation. Transmission of the whispered voice is decreased as a rule in pleural effusions and spontaneous pneumothorax, but the latter condition may be recognized by the hyperresonant percussion note, in contradistinction to the wooden dullness present over pleural effusions.

Every case of suspicion of tuberculosis requires examination of the sputum; but a single specimen being negative for tubercle bacilli should never be accepted as ruling out tuberculosis. Tubercle bacilli never appear in the sputum unless there has been some caseation and destruction of pulmonary tissue, and in many cases this process has not yet occurred.

The repetition of a few of the basic principles of the physical examination of the lungs has been made in this short article in the hope that the waning interest in this diagnostic method may be revived. The modern, precision-machine method of diagnosis should not eliminate or cast into the background the physical examination which has served us so well in previous years. Physical diagnosis can give us a mass of valuable information which the x-ray film cannot supply, and, consequently, should never be assigned to a minor role in medical practice.

DENTISTRY

J. H. GUTON, D. D. S., *Editor*, Charlotte, N. C.

ON DENTAL FOCAL INFECTION

SOME say much, some say little, disease is caused by focal infection. Opinion as to which organ is the source of the greatest number of cases is divided. A German dentist makes what is probably a fair statement of the case.

A careful examination with application of all available tests should be made in order to rule out all other pathologic conditions before assuming focal infection. The minimum requirements before a diagnosis of focal infection include always a certain blood picture and sedimentation rate, if possible with the figures after 1, 2, 3 and 24 hours, and record of the rectal temperature mornings and evenings for several days.

In endocarditis, glomerulonephritis, rheumatic fever and acute septicemia, focal infection is to be suspected. In chronic cases, the diagnostic significance of even the slightest increase of the rectal temperature and of slight tachycardia should be emphasized. The blood sedimentation rate will usually show a slight increase, particularly in the figure after one hour. The blood picture will show a slight shift to the left. None of these signs is in itself significant; a combination of them justifies the assumption of a likelihood of focal infection. The diagnosis will be supported when regional enlarged and tender lymph glands are found or Slauk's phenomenon of muscle fibrillations. As accurate a diagnosis as possible should be made before sending the patient to the dentist, as the pulling of a number of teeth is no minor affair and no success can be guaranteed.

Any tooth with a dead pulp has to be taken into consideration as a possible focus, and the roentgenogram is only of limited diagnostic value, as a granuloma may be projected into the root of a tooth and thus not visualized.

As a rule the roentgenogram will show a number of teeth with granulomas or cysts and the question will arise whether one or several active foci are present; the situation becomes even more complicated as it has been shown that teeth without granulomas may nevertheless be carriers of focal infection. The roentgenogram is indispensable for the discovery of cysts, impacted roots, and residual granulomas which cannot be diagnosed by any other method.

There is no method by which the activity of granulomas or of teeth without pulp can be determined with certainty.

1. Tauchert, *Monch. med. Woch.*, Dec. 13th, via *Internat. Med. Dig.*, April.

In exceptional cases, even living teeth may have to be taken into consideration as a cause of focal infection, particularly if they are surrounded by deep gingival recesses in which secretions may be retained.

Thorough examination of the paranasal sinuses, the nose, and the ears and the tonsils should always precede sanitation of the teeth.

Not even extraction of a tooth guarantees removal of the focus, as closed residual granulomas and radicular cysts may be found after extraction. When anterior teeth are involved, resection of the apices of the roots is often carried out in order to save the tooth; this operation must be preceded by careful treatment of the root, and is less reliable than extraction but will often be successful.

The author is of the opinion that dental focal infection is more frequent than all other types together, including the tonsils.

Failures may be due to inaccurate diagnosis, to psychic inhibitions against radical measures, or to the fact that independent metastases are present which are not influenced by elimination of the primary focus. Activation of hitherto latent foci must be taken into consideration.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

SWIMMING AS RELATED TO PUBLIC HEALTH

WITH warm weather comes the swimming season.

The beach, the municipal swimming pool, and the "old swimmin' hole" are patronized by a large percentage of the general population, the younger age group, of course, predominating. All people think of swimming as a delightful pastime but few think of it as a dangerous pastime.

In addition to its being responsible for many deaths by drowning each year, it is also responsible for much disease.

Polluted water can be responsible for typhoid fever, middle-ear disease, sinus disease and certain kinds of skin disease.

So important is it that the public know the dangers that accompany swimming, it is our conviction that the health officer should inform the public through the daily press and the radio and that the family physician should, in the swimming season, in his daily rounds sound a note of warning or at least a note of caution to the families who look to him for health and safety advice.

Of course, the main object of this article is to enlist the active coöperation of the private physician in this public health problem for in the last analysis it is, as it should be, the family physician and not the health officer to whom the individual looks for advice and guidance.

INSURANCE MEDICINE

For this issue, HARRY DINGMAN, M.D., Chicago
Vice President and Medical Director
Continental Assurance Company

MEDICINE has developed many specialties through the ages, not the least interesting of which is prognosis. Prognosis has never become a clinical specialty, but it is the foundation of insurance medicine. Differing from other medical specialties, insurance medicine has its basis in averages. The insurance medical man makes no effort to foretell length of life. He accepts a risk with no thought as to how many years the individual may live. He ventures no opinion on expectation of life. What he does prognosticate is expectation of death. The medical director thinks of an applicant as multiplied by a thousand, and tells his company what mortality results may be expected according to the law of averages. He makes his calculation on whether there may be ten deaths a thousand annually—as might be expected at age 41 by the American Experience Table—or twenty deaths a thousand, which would be 200 per cent mortality.

If ten deaths annually are expected in any particular group of a thousand risks, 990 will be living at the end of a twelve-month period. With 200 per cent mortality, there will be 980 living after one year, and after ten years this same 200 per cent mortality group would have 200 deaths, plus a few more because the group is growing older. There would remain almost 800 who conceivably continue to pay premiums; and it is the premium-paying members of the group whose money, with due allowances for interest and expenses, must pay the claims in their class.

Many factors determine appraisal of a risk, perhaps none more important than heredity. The formula for attaining old age is to make careful selection of one's parents and grandparents. It is a perpetual surprise to insurance selectors how little our applicants know about their forebears. Heredity might seem to be that phase of insurability where insurance would have built the most dependable statistics. A vast experience might be expected to have been available since 1762 when the Equitable Society of England started life insurance selection on a scientific basis, but we have more accurate knowledge of the effect of heredity on barnyard animals than on humans. The majority of insurance applicants cannot give dependable information concerning their grandparents, and far more than a few are uninformed about their own parents, why they died if they did die, what their health is if they still live. Insurance records on family history have so much "don't know," so much misinformation where applicants refuse to admit cancer and tuberculosis and many other things, that the statistics have a limited value.

Personal history comes to us more dependably. The individual may not know about father and grandfather—they were born to die anyhow—but he is deeply concerned with himself, and can remember all he thinks he should. Occasionally an applicant forgets to remember about going west for his health, about a prostate that bothers him, about an annoying dyspepsia. Accordingly very satisfactory statistical experience has been built on impairments such as pleurisy and peptic ulcer where our reliance for the basic information is on personal history as given by the individual.

Most dependable of all statistics are those that pertain to physical factors measurable with reasonable accuracy. Time and space permit comment on two such impairments, height and weight. It is easy to determine exact height with shoes on, exact weight with ordinary clothes on. A huge experience tells with almost uncanny accuracy what the mortality will be if the applicant's build is 5.11.120, and what it will be if 5.11.220. The women are upsetting calculations a little because they insist on being slimmer than their mothers and their aunts, and what was average for Aunt Bella makes present-day Mary Jane Smith look like a fatty. That is how she feels about it.

Blood-pressure has had many statistical studies by insurance medical men in association with their actuaries. Dr. J. W. Fisher reported on 19,339 Northwestern Mutual cases in 1911-14; Dr. L. F. Mackenzie on 18,637 Prudential cases in 1915; Dr. Oscar Rogers and Arthur Hunter on 67,000 New York Life cases in 1919; Dr. Brandreth Symonds on 150,419 Mutual Life cases in 1922. From these data on more than a quarter million persons, it became manifest that 120 systolic is average at age 20, 124 at age 30, 128 at age 40, 132 at age 50, 135 at age 60. The old time rule of 100 plus your age went into the discard.

Average is not necessarily normal, of course. We may may be average individuals in letting our arteries harden up with age, but hard arteries are not normal arteries. So 135 systolic may be average at age 60, but who wouldn't prefer the driving efficiency of the circulation that 120 indicates? Few of us are strictly normal. Most of us are more or less average. If a little better than average, perhaps we are standard. A standard risk, in insurance terminology, is an average risk with leaning toward the normal side. When an actuary figures the premium rates that we must pay to get our life insurance policies, he requires a mortality table, a compound interest table, and a schedule of expenses that shows how much it costs to pay the agent and the medical examiner and the printer and the clerk who sends notices, and the taxes. He realizes that the premium would be lower at age 60 if systolic 120 were average, rather than 135;

but he has to calculate rates on conditions as are, rather than as might be, glad to modify his calculations by recognition that the age 60 group undoubtedly does have many 120 systolics. His standard rate leans on the normal side of average. It is understood, of course, that blood-pressure is used illustratively as one of many factors that concern the appraisal of a risk.

In 1939 appeared a Blood-pressure Study so large that it involves 1,309,000 policies with 49,098 deaths. It is highly informative on what happens when systolic is high, diastolic is high, either or both. It suggests strongly that 149/90 is substandard: the mortality result for all ages combined was 126 per cent. Which means there were 126 deaths in a group of (say) 10,000 persons where 100 would be expected if they had been average. Think of it as a medium-size town with 126 funerals a year where 100 might be considered usual. When blood-pressure readings were 145/90 the mortality ratio was 159. When 150/100, mortality ratio was 223.

Certain associated factors are strongly influencing. Interrelationship of some impairments may be simply additive in their effect on mortality. Some may actually offset each other, as, for instance, tuberculosis in the overweight. But hypertension in the overweight has an accelerative effect. The heavy-set person who is hypertensive has an early rendezvous with his forefathers, who very probably were themselves heavy-set and hypertensive. Heredity endows us with our physical characteristics and that involves such vital factors as integrity of circulation and efficiency of metabolism, as well as the more esthetic attributes of color of eyes and shape of nose.

Interrelationship of impairments is an absorbing study. In these 1939 blood-pressure statistics were 20,210 cardiovascular-renal deaths. The death rate advanced relentlessly as systolic readings went up, equally surely as diastolic readings went up. That fact might well have been anticipated. But the same relationship showed when diabetes deaths were analyzed. So also cirrhosis of the liver. The cancer death rate advanced as systolic pressure showed higher: as diastolic went up the death rate went down. Now why would that be?

And what is the explanation of 2,850 suicides? The death rate decreased as systolic readings went higher. Would it be because suicide is associated with the hypotensive states of depression and melancholy? Then why did the suicide rate go up as diastolic readings were higher?

Insurance medicine asks many questions that it cannot answer. In a sense insurance is group medicine, non-therapeutic group medicine with emphasis on prognosis. Yet it requires appraisal of each individual even as clinical medicine. A group has

its component parts and each individual has to be assessed before assigned to his class. If properly classified, the individual necessarily partakes of whatever advantages and hazards the class has. As these results become known in mortality studies, we apply the experience of the past to the present-day individual in scientific endeavor to prognosticate the future.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

TREATMENT OF FRESH BURNS WITH SCARLET RED BANDAGE AND MOIST SULFANILAMIDE DRESSINGS

THE tannic-acid spraying of burns is a great improvement over former methods of treatment. It is not as satisfactory as some of its proponents represent it to be. Few measures are.

A means of treatment¹ which appears to be worthy of trial, and which we are now using hopefully is outlined.

General anesthesia may be necessary for the cleansing of grossly soiled burns; topical anesthesia with metacaine, 2 per cent, frequently suffices, and in those fairly clean the opiate alone furnishes adequate analgesia for gentle debridement and removal of surface contamination, by use of sterile soap solution, gentle friction with gauze dressings and forceps and scissors. *Be as careful to prevent introduction of bacteria as in handling exposed viscera. Preparation should include the usual surgical scrubbing of hands and use of cap, gown and mask.*

The most widely used cover for the prepared burned surface is some forms of coagulum, such as tannic acid, gentian violet. An alternative method is described which has given excellent results.

The surgically prepared burned surface is first overlaid with strips of sterile scarlet red bandage which extend considerably beyond the limits of the burn, or in the case of an extremity may encircle the limb. Over this is laid a massive sterile pad of gauze and cellulose cotton which is moistened before application with a freshly boiled 1-1½ per cent solution of sulfanilamide in water. Such solutions, being supersaturated, precipitate out in the dressing. The moistened pad is applied after it is sufficiently cool, then covered with waxed paper and bandaged in place with an elastic bandage prepared by slitting 2 in. stockinette. Adhesive strips may be used to help anchor the finished dressing.

Leave undisturbed until healing of areas of second-degree burn is complete unless systemic or local evidences of infection occur. Burns uncov-

ered after 8 to 10 days may be found healed completely except in areas of third-degree involvement. Scarlet red bandage is kept under gentle counter tension to prevent separation from the underlying surface.

If healing is complete the scarlet red bandage will be found to be dry and it can be carefully removed. If, however, the central area is moist it is indicative of incomplete healing. If not obviously purulent the scarlet red bandage is not disturbed and a second massive dressing moistened with sterile sulfanilamide solution is applied for several days.

Obviously infected areas encountered in any stage of the management are treated by direct application of the moist sulfanilamide dressing to the wound and the maintenance of some degree of pressure by incorporating moistened sea sponges or a layer of sponge rubber in the bandage. The dressings are changed daily until the wound appears clean after which the scarlet red bandage may again be used if the areas to be covered by ingrowth of epithelium are ¾ in. or less in width.

Early grafting materially reduces the period of disability and the extent and depth of scar tissue formation and its resulting disability.

We are not as careful as we should be to maintain surgical cleanliness in the management of wounds already infected. All of us can improve our surgical, including obstetrical, results by obtaining and maintaining the rigid aseptic technique of the operating room in performing our office and home surgery. And with reasonable care and patience it can be done.

PROCAINE INJECTIONS IN MUSCULAR SPRAINS OF THE LOWER BACK

My experience with injections of an anesthetic solution for relief of certain lower-back pains has been gratifying. The technique described by Furman¹ is recommended by this Department.

Muscular sprains of the lumbar and lower dorsal portions of the erector spinae group are frequent cause of prolonged disability and suffering. The affected muscles are spastic, there are spots of marked tenderness, and in the more chronic forms a reference of pain to remote parts of the segmental arc.

With 2-per cent procaine solution subcutaneous blebs are made over the points of maximum tenderness. A 20-gauge intravenous needle with a short bevel is then introduced through the anesthetized skin and carefully passed down to the lumbodorsal fascia (which may be distinctly felt). The patient should be warned that his pain will be momentarily increased when the needle passes

1. W. E. Gower, Pacahontas, in *Jl. Iowa Med. Soc.*, June.

1. Thos. Furman, Greenville, in *Bul. Greenville S. o. Med. Soc.*, May.

through the fascia. We know by the patient's reaction that the injection is being made in the right spot. Barely pass the needle through the fascia, not deep into the muscle; slowly inject not more than 2 c.c. of procaine; withdraw the needle; and repeat the process over the other areas of maximum tenderness. It is rarely necessary to use more than 6 or 8 c.c. of the procaine solution, in all. After the injections are completed, lightly massage the muscles with an alcohol sponge. At the end of five minutes let the patient arise from the table and try a wide range of active motion. At this time a smile of pleasant satisfaction usually spreads over his face.

If the injection has been correctly made he is able to resume his usual activities; which he should be encouraged to do. The relief afforded in a majority of cases is permanent. The pain does not recur after the wearing off of the anesthesia; and, when permanent relief is not established, there is usually an interval of several days before the injection needs to be repeated. Only a small amount should be injected, that just beneath the lumbodorsal fascia. Large amounts injected deep into the muscle itself will cause a bruised feeling after the anesthesia has worn off.

IMMUNIZATION AGAINST INFECTIOUS DISEASES IN THE UNITED STATES ARMY

WE are often asked, "How often should one be vaccinated?" As reliable information as any is that on which the Army¹ relies and on which it makes its decisions.

Vaccination against smallpox, typhoid fever and tetanus has long been required for all in the United States Army, and active immunization against tetanus is now advocated by scientists throughout the world as good military practice.

A calf-lymph vaccine is employed against smallpox, using the multiple pressure method, revaccinating at intervals of three years, or earlier if indicated by transfer to a theater of operations, or in the event of a threatened outbreak of smallpox.

Against typhoid and paratyphoid fevers the triple-typhoid vaccine used contains per c.c., 1,000 million typhoid bacilli and 250 million each of the paratyphoids A and B. One revaccination is required at the end of three years, except for individuals over 45 years of age. Additional vaccinations may be required for troops leaving for a theater of operations, or confronted with an epidemic.

Tetanus antitoxin has been largely replaced by tetanus toxoid, which has come into general use for the production of an active immunity. Initial

vaccination consists of three 1-c.c. doses given three weeks apart; subsequent doses of 1 c.c. each, given as follows: a) at the end of one year, b) at the time of departure for a theater of operations, if this occurs more than six months after the last dose received, and c) whenever the individual is wounded or otherwise exposed to infection with tetanus. For the treatment of any cases of clinical tetanus that may occur, or for the passive protection of any wounded individuals who have not been immunized with toxoid, a single dose of antitoxin will be administered and active immunization with toxoid started at the same time.

Other agents may be required only for small groups of susceptible men exposed to localized outbreaks of certain diseases common in this country. For example, diphtheria toxoid or scarlet fever toxin, particularly when outbreaks of these diseases appear among young recruits.

Our troops may be sent where they will be exposed to disease uncommon in this country. Consideration has been given to the possibilities of vaccination against yellow fever, cholera, plague and typhus fever.

Yellow fever vaccine has been manufactured since 1936 by the Rockefeller International Health Board. It is administered in a single subcutaneous dose of 1 c.c.; and it can be used advantageously under epidemic conditions. Since 1938, this vaccine has been given to almost two million persons in Brazil.

Anti-cholera vaccines have been used for many years, and there is evidence to indicate that a killed suspension of the vibrios, of the type used in Japan and in India, affords protection.

Our troops may be exposed to epidemic plague, of either the bubonic or pneumonic type. It would be logical to use a bacterial vaccine, although there is some controversy as to the protection afforded.

Delousing of troops is a valuable control measure in typhus fever, but it is not considered adequate in the presence of epidemic conditions. Vaccines are now being studied for prophylactic use, and the results in animals indicate that they may afford adequate protection in man. Arrangements have been made for the manufacture of large quantities of typhus vaccine for use in the Army.

The preparation of vaccines to protect against three different types of influenza is being undertaken for experimental testing in the winter of 1941-1942. Results to date suggest that, although this vaccine is by no means perfect, it may have some practical value.

ROCKY MOUNTAIN SPOTTED FEVER.—A case is reported (*Med. An. D. C.*) developing during a post-partum period, confirmed by guinea-pig and Weil-Felix tests, and by post-mortem findings.

1. Lt.-Col. J. S. Simmons, Washington, in *The Diplomat*, May.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

MIRROR-WRITING AND WORD-BLINDNESS

PRIOR to Thomas Orton's paper in 1925 on mirror-writing and word-blindness it was not known that the two conditions were intimately associated. The problem occasionally arises in the practice of every oculist and a brief resumé of the subject seems in order.

There may be many gradations and degrees of the two conditions in the same individual, one or the other may predominate, or one only may be present. In children, especially, the diagnosis as to which condition is being dealt with presents difficulty which requires more than a casual study. Orton states that directional confusion in reading and writing is a clinical entity and is based on cerebral dominance. These conditions may be imposed by training. They are the result of failure to establish the physiological habit of working exclusively from the engrams of one hemisphere. Since the two hemispheres of the brain are so geared for visual impressions that the impressions formed on one are refracted upside-down on the other and vice versa, and when only one hemisphere is active in this function there is incomplete elision (striking out) of one set of antitrophic (against a turn) engrams; hence upside-down vision—i.e., mirror vision, confusion in the direction of reading. This is based on the theory (mnemic hypothesis) that stimuli or irritants leave definite traces, marks or imprints (engrams) on the protoplasm of the animal or plant, and when these stimuli are regularly repeated they induce a habit which persists after the stimuli cease. Assuming that the germ cells share with the nerve cells in possessing engrams, acquired habits may thus be transmitted to the descendants. Then the conditions favorable to mirror-writing or word-blindness may be summarized as follows. Every child at some period of its development will produce mirror-writing. Proficiency at mirror-writing may be acquired by anyone by practice. It is possessed by all persons to some degree but remains unobserved. It is sometimes associated or produced by defects in vision and in some cases can be corrected by glasses. It is seen in mental weakness, in hysteria and in moral perversion. A neurotic inheritance may cause it. It is more common among men than among women, among children with impaired intelligence and deaf mutes, in katonias and in absent-minded persons otherwise normal. Most investigators emphasize the point that mirror-writing is the normal way for left-handed

persons to write. It can be produced under hypnosis, after anesthesia, under the influence of alcohol and certain drugs; as result of congenital lesion of the angular gyri from hereditary factors and from traumatic lesions of the gyrus; in the left-handed, after practice in writing with both hands at the same time, one hand writing normally, the other doing mirror-writing. Spiritualists write mirror fashion and telegraphers in jotting down messages. It is also produced by lack of control, environment, experience and impressions on the brain in early childhood. In congenital word-blindness it is the higher visuo-psychic centers which are at fault. A child so afflicted has great difficulty in writing and in correcting his errors of omission, misspelled words, elisions etc. So when a child writes with his left hand the kinesthetic or motor memory centers are in control of the situation and act independently of the visual control factors, and mirror-writing results. According to Orton these children are always in doubt as to whether words should go from left to right or vice versa. He thinks this is due to maldevelopment of the angular gyri wherein the motor memory sense is not supervised, held in control, or fully corrected by the visual imagery factors. When using the right hand words are misspelled, letters omitted or reduplicated, wrong letters used, words inverted, letters written backwards. If using the left hand, though words are misspelled, they are written mirror-wise and with greater ease and dexterity than with the right hand. The writer is then oblivious of this mistake and will write his name normally with his right hand and with his left will write his name beneath the first mirror-wise. Both are read with ease, the child not knowing which is the correct one.

The frequency is one in every 2500 children (Beely). Gordon found 0.5 per cent among normal children, 8.5 per cent among feeble-minded children. This, he thinks, is not proof that it is an indication of feeble-mindedness. Four per cent of persons are left handed. Wild says that these conditions are more often encountered in left-handed persons whose right eye is the fixing eye, than in left-handed persons whose left eye is the fixing eye. The same is true of right-handed persons whose left eye is the fixing eye.

In the milder types in children special classes in school and individual instruction are aids to recovery or improvement. It seems unwise to attempt to make a naturally left-handed writer use his right hand. Stuttering, greater confusion and other difficulties are prone to result.

ESSENTIAL HYPERTENSION.—To differentiate from Graves' disease may be very difficult. Here moderate elevation of BMR is not uncommon.

PEDIATRICS

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS PROVIDES SPLINTS

ONE of the many responsibilities that the Foundation has assumed is the free distribution of Toronto splints and Bradford frames in epidemic areas and to indigent persons, regardless of age, who may need them. Over 3,000 of these appliances have been used during the past two years and the central supply depot in New York City is ready to meet any future deserving requests for these splints and frames.

Where a Chapter of the National Foundation exists, splints and frames should be ordered through such agency. Where Chapters have not yet been formed they may be ordered direct from the National Foundation's office, 120 Broadway, New York City.

Splints and frames will be supplied only as needed and are not to be stocked in anticipation of local needs. Transportation charges will be collected from the consignee as there is no other charge for the equipment. Except during epidemics these splints and frames are made available only to indigent patients. For effective results it is necessary that sizes be accurate and agree with those measurements given.

Used splints should ordinarily remain in the custody of the Chapter or other agency to whom they have been consigned. It is expected that the Chapter or other agency will repair and otherwise make the best possible use of such splints. Unused splints must be returned in their original container to The National Foundation for Infantile Paralysis, care of the Metropolitan Device Corporation, 1250 Atlantic Avenue, Brooklyn, New York, or to some other depot designated by the Foundation. The original borrower is also expected to pay return express charges.

Each agency receiving splints and frames from the National Foundation is requested to acknowledge receipt of such appliances and to furnish a report covering the service rendered, giving details as to the number of patients served, part involved, degree of paralysis and state of patient on removal of splints.

For arm splint measure the distance from the tip of the olecranon to the web of the thumb. The arm splint is attached to the Bradford frame by means of special clamps, which are shipped with each frame.

Distance between tip of elbow and web of thumb.	Size of Splint
7½—9¼ inches	1
9½—12¼ inches	2
12½ and over inches	3

For leg splint measure the distance from the center of the patella to the sole of the foot.

Distance between centre of patella and sole of foot.	Size of Splint
8 — 8½ inches	C
8¾—9¼ inches	B
9½—10 inches	A
10¾—11 inches	1
11¼—12¼ inches	1½
12½—13½ inches	2
13¾—15 inches	2½
15¼—16½ inches	3
16¾—18¼ inches	3½
18½—20½ inches	4
Over 20½ inches	5

For Bradford frame measure the length of the patient from the top of the head to the sole of the foot, and the breadth from the tip of one shoulder to the other.

Measurement	Size of Frame
47" x 16"	No. 1
53" x 18"	No. 2
59" x 19½"	No. 3
65" x 21"	No. 4
71" x 22"	No. 5
77" x 23"	No. 6

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

THE FRONT LINE TRENCHES, says a distinguished specialist in tuberculosis are occupied by general practitioners, who must ever be alert to the possibility that active pulmonary tuberculosis may be the cause of their patient's disability. And he says that even with the exercise of our keenest judgment, diagnostic errors will occur.

A good deal of what he goes on to say is pertinent: The responsibility for determining the presence or absence of active pulmonary tuberculosis must rest upon the general practitioner. His is the opportunity to make an accurate diagnosis, he must realize that to many patients admission to a hospital for the tuberculous is a stigma which must be avoided, if at all possible.

The time-tried dicta by the late Lawrason Brown continue to render invaluable service. These diagnostic criteria are: 1) a history of pleurisy with effusion without apparent cause; 2) a history of hemoptysis of a drachm or more, out of a clear sky; 3) stethoscopic findings of persistent, localized, moist rales, after cough, usually above the second rib; 4) demonstration of tubercle bacilli in a certified specimen of sputum; 5) definite local-

J. H. Peck, Oakdale, Iowa, in *Bull. St. Louis Med. Soc.*, May 16th

ized x-ray shadows, particularly in the same area in which rales were heard. Later, he asserted that tuberculin reaction was very helpful.

For demonstration of tubercle bacilli, a combination of methods is required, viz: direct smear, concentrates, flotations, cultures, animal inoculations and gastric washings. Even with this approved technique, about 4 per cent of patients with evident pulmonary tuberculosis will fail to demonstrate tubercle bacilli.

Contrary to formerly accepted opinion, primary infection by the tubercle bacillus may occur almost at any age, although relatively uncommon after the age of 25. All reasonable efforts must be made to find, isolate and close the open case, if our further efforts are to be reasonably successful in eradication of tuberculosis.

Increased reliance must be placed upon x-ray films of the chest, as physical signs are often difficult to determine and may be deceiving.

The most beneficial measure is absolute bed rest while toxic, then properly graduated exercise and, later, readaptation of the patient to work. The character of food, the adequacy of vitamins, improved environment and heliotherapy are all factors which aid resistance.

Collapse therapy is a great therapeutic measure, even for ambulant cases. Complications should be treated, both tuberculous and non-tuberculous. The skillful physician uses no one method but combines all useful methods. To judge the efficacy of treatment: treat and watch the results; change may be necessary in therapy almost daily.

The time of healing is approximately four years, although there are periods of exacerbation of disease and times of apparent arrest.

In 30 per cent of tuberculosis patients pulmonary lesions heal spontaneously; another 30 per cent are fulminating, terminating fatally without regard to quality or character of treatment, leaving 40 per cent of variables, which make up the bulk of our sanatorium cases.

All of us family doctors should accept this, the most important role in the war on tuberculosis; be on the lookout for tuberculosis; be able to diagnose it early and continue the cure after return from sanatorium. And we should make it plain that we expect reports on our patients in sanatoria at reasonable intervals, and a report at time of discharge, stating present condition and making recommendations as to post-sanatorium management. However willing, energetic and competent the family doctor may be he can not possibly cooperate in perfecting the cure unless all instructions and recommendations for care after discharge from sanatorium be conveyed to the patient through the family doctor.

PERSONALITY DISORDERS CAUSING DIGESTIVE COMPLAINTS USUALLY

NEED NO SPECIALIST

TO OBTAIN MAXIMUM BENEFIT for patients presenting gastrointestinal complaints, a good physician must be a practical psychologist and psychiatrist.¹ The deviations from normal personality producing complaints referred to the gastrointestinal system include excessive emotional reactions to various situations (situational neuroses); inadequate personalities (usually notable for general nervousness); anxiety neuroses; hypochondriacal and hysterical reactions; and depression.

Many patients have digestive symptoms as a manifestation of personality disorder before they develop organic disease of the digestive tract, which might be prevented if successfully treated. This seems especially true with respect to peptic ulcer. Functional nervousness, including fatigue and anxiety, is by far the greatest detectable cause of recurrences. The question may be raised as to how many of these patients might have escaped peptic ulcer if their functional nervousness had been recognized and treated.

¹G. C. Robinson, in *Bull. Johns Hopkins Hosp.*, Mar.

TREATMENT OF THRUSH WITH NITRATE SILVER

TROUSSEAU first recommended silver nitrate therapy in thrush and it has been thus employed somewhat largely since. In order to be effective the drug must pass into the esophagus and Millet¹ advocates a simple means for so doing. Balls of cotton wool (three are enough) are tied round the middle with a strong thread and then soaked in a one per cent solution of silver nitrate. One ball is given to the patient to suck every four hours. Carbonated water is given in the intervals. At the end of 12 hours; i.e., after the three silver nitrate balls have been sucked, the thrush has disappeared completely from the tongue and palate, and the lingual mucous membrane is clean. No difficulty is encountered as regards the sucking of silver nitrate balls by adults. With children the balls may be sprinkled with a little vanilla-flavored sugar or honey, and in the case of infants the soaked, flavored cotton wool can be placed inside a slit dummy. The method is simple and effective. There is no painting of the throat and thus no desire to vomit on the part of the patient.

¹ *Medical Record*, March, 1941. From *Presse Medicale*.

FIRST AID TREATMENT OF SNAKE BITE

HAVE the patient lie down in a warm dry place and apply a tourniquet 1 to 2 inches proximal to the wound, just tight enough to obstruct the veins

¹ Fender, J. W., *Proc. Staff Meetings Mayo Clinic*, Feb.

but not the arteries; every 20 minutes loosen the tourniquet for 1 minute and as the swelling progresses move it farther up the limb. The bite of most of our poisonous snakes leaves two small punctures, that of the non-poisonous a horseshoe-shaped row of teeth marks or a series of scratches.

Treatment for shock should be instituted at once. Make criss-cross incisions $\frac{1}{2} \times \frac{1}{2}$ inch through each fang mark and well through the skin to allow free bleeding. Apply suction for at least half an hour by mouth or otherwise. As the swelling spreads, make a ring of incisions $\frac{1}{4} \times \frac{1}{4}$ inch just in the swollen area 2 inches from the primary incisions and apply suction to each incision for 15 minutes of each hour for 10 to 15 hours. Pain is severe and shock must be continually combated. The majority of deaths due to the toxemia occur in 24 to 36 hours.

ROSEOLA INFANTUM (EXANTHEM SUBITUM)

THE infant becomes suddenly ill with a high fever, is restless, irritable and refuses most of his food, but is not toxic. The physical examination discloses little. There is a lymphocytosis and usually a leukopenia. The fever lasts three days and then drops by crisis or lysis. After the t. is normal for a few hours, a measles-like rash appears over the body and lasts for two days. There are no complications and no sequelae.

"The diagnosis is made from the sequence of events, first the fever and then the rash after the t. is normal." There are no Koplik's spots. In measles the t. does not drop when the rash appears, but remains high for two or three days longer. In German measles the rash appears the first day of illness and the highest t. is coincident with the eruption. Scarlet fever's eruption and blood picture are different, and there is a very red throat.

Most observers consider roseola infantum a clinical entity, a few that it is a grippal infection or a reaction to food or drugs.

There have been epidemics in hospitals of roseola infantum. The incubation is about 10 days.

The etiology is unknown and cultures of the throat have been of no help. The cause may be a virus.

AMINOPHYLLIN IN ASTHMA

The Council on Pharmacy and Chemistry of the A. M. A. declares:

"The therapeutic claims for all accepted products of aminophyllin should be restricted to those recommending it for the diuretic effect, and as a myocardial stimulant. . . . There is no satisfactory evidence that aminophyllin or other known theophyllin preparation acts as a dilator of the

coronary arteries or has effect in reducing the pain of angina pectoris."

We¹ have assembled the results of aminophyllin therapy in 31 patients treated recently for acute respiratory distress of asthmatic origin in the Immunology Clinic and in the hospitals of the Medical College of Virginia. All of these patients were given from 0.24 to 0.48 Gm. of aminophyllin in 10-20 c.c. of salt or glucose solution intravenously. Repeated doses of aminophyllin were given the same patient on a number of occasions.

Twenty-nine per cent of our 31 patients experienced at one time or another complete relief, 51.6% experienced moderate relief, 9.6 slight relief. Results were not constant, a patient experiencing complete relief might show no relief at all in his dyspnea when given the same dose on another occasion.

The effects were not always proportionate to the size of the dose. Although there were 25% of failures when 0.48 Gm. were given and 31.4% when 0.24 Gm. were given, complete relief was experienced by 28.5% of those patients receiving the smaller dose, while only 16% were equally improved by the larger dose.

In our experience aminophyllin is a valuable drug in the treatment of intractable asthma. Seventy-five out of every 100 injections gave relief, often immediate and complete. In some instances relief was slow in appearing, in others it was transitory. We encountered no unfavorable reactions. Our experience confirmed the observation made by others that epinephrine-fast cases frequently respond to aminophyllin, while on the other hand cases of intractable asthma are favorably influenced by epinephrine after failure with aminophyllin.

The author of this column has found this a very beneficial treatment. The smaller dose is somewhat slower but less depressing or weakening; the larger dose dramatic in its effect but the patient very weak afterward.

¹ I. Brown, A. G., III, & Blanton, W. B., Richmond, S. M. J., *riu Dig. of Treatment*, Jan.

MEASLES, READING.—The conjunctivitis need not deprive a child of the pleasure of reading. It is *light*, *not reading* that makes the eyes smart. Put smoked glasses on the child and let him read.

TOBACCO increases the metabolic rate by 2 per cent in men and women.—*Hadley*.

CONGO RED.—A 1% sol. in water has value in many infections. It is non-toxic in doses far greater than required for therapy, has hemostatic powers, and can be successfully used in many cases in which a sulfonamide has failed or proved too toxic.—W. L. Green, in *Jl. Ind. Med. Soc.*, June.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE THYMUS

THE THYMUS, ordinarily spoken of as the thymus gland, Marshall and Piney regard as being an epithelial organ extensively infiltrated with lymphocytes. It is developed from the third branchial pouches (entodermal) and later becomes filled with lymphocytoid cells of mesoblastic origin. The thymus is divided into lobules in which a cortex and medulla can be differentiated.

At birth the thymus gland weighs from 12 to 15 grams, and it increases in weight for some time. According to some, the thymus reaches its maximum development in the first two years of life; others say it continues to grow until puberty—to as much as 35 grams—when it rapidly undergoes fatty degeneration and is replaced by adipose tissue.

The function of the thymus is in doubt, but it is supposed to have some specific part in the development of the bony structure of the body. Our interest in this structure is particularly because of its possible connection with sudden death in children.

A number of years ago a young mother, who lived in the country, came to the hospital with her infant child which was evidently dead. The frantic mother had concluded that during her sleep she had in some way smothered the child. An x-ray picture showed a greatly enlarged thymus, and it was explained that death was probably due to an enlarged thymus and that the child had not been smothered at all.

Many cases are reported where children have died suddenly just as they were being given a general anesthetic, as for a tonsillectomy. No such accident has ever been recorded in this clinic; however, the fact that an enlarged thymus gland has been associated with sudden death under different circumstances makes it important that children be examined for this. Infants and young children who have any unusual symptoms with reference to breathing should have x-ray examination of the chest to determine whether or not there is any enlargement of the thymus gland. Unexplained cyanosis in infants and young children may be due to an enlarged thymus. The diagnosis is usually easy from an x-ray picture properly made, and treatment by x-rays usually gives prompt relief.

In some cases there are no symptoms, even though the thymus gland is much larger than average. Frequently we see a child with attacks of cyanosis of severity according to the enlargement of the gland. Possibly interference with respira-

tion is due to compression of the trachea by the thymus becoming congested from time to time. Enough tracheal compression may cause noisy breathing, difficult inspiration and expiration—thymic stridor. Thymic asthma is a condition which should be suspected in children who have respiratory difficulty, although every possible source of trouble should be ruled out.

So-called thymic death may occur from:

1. Pressure of the enlarged gland upon the trachea, by suffocation. It is possible that the sudden congestion or rapid hemorrhage into the thymus in small children may cause death by suffocation.

2. In the other type of thymic death the patient just dies suddenly and unexpectedly. In this type of death, as Hammar has stated, death may be due to some other cause entirely, although a very large thymus may be present.

The diagnosis of the thymus gland as the cause of trouble is made principally by x-ray examination made with the child in a vertical position. The exposure must be rapid—one-tenth, better one-twentieth, of a second—at a distance sufficient to give a clear picture with no distortion. The exposure may be necessary to produce negatives of this density in order to get the true outline of the heart and thymus gland.

While a diagnosis can usually be made from the antero-posterior view, yet a lateral view may show compression of the trachea not shown by the antero-posterior picture.

The x-ray or fluoroscopic examination of a suspected thymic case should always be made before any anesthetic is given and should be a routine part of examination in all cases where there is respiratory difficulty of unexplained origin.

IMPROVEMENTS IN THE DETAILS OF INSERTION OF THE SMITH-PETERSEN NAIL IN FRACTURES OF THE HIP JOINT

IN the typical intracapsular fracture of the neck of the femur insertion of the Smith-Petersen nail holds the fragments in correct position; but the insertion requires a great deal of skill and the cooperation of an efficient x-ray department.

The Engel and May localizer is a great help in this procedure and by means of this it is much easier to localize the point where the guide pin is to be placed.

When the antero-posterior film is made and the correct position found, for one plane, for the insertion of the nail; instead of using a short pin to hold the localizer in the vertical position while the transverse picture is being made, we substitute a long localizing pin placed as near the estimated angle as possible, and insert this down into the

head of the femur. This enables a very accurate localization to be accomplished without any great delay and, at the same time, serves as a fixation for the head of the femur and prevents any displacement in case the leg is moved at the time the transverse x-ray picture is made. The insertion of the pin, as a rule, extends well up into the head of the femur and ordinarily this will hold very well. In some cases, however, especially where the fracture is near the head of the femur, it is well to insert the pin within three-eighths of an inch of the articular surface of the femur. This gives excellent fixation and, at the same time, the firm tissue of the head of the femur holds the Smith-Petersen nail more firmly.

It is necessary to make an x-ray picture of the femur neck before closing the incision so that the nail may be driven in a little further if necessary.

It is useful, too, to consider the length of the pin and from the x-ray, by means of a localizer, estimate the exact length of the neck of the femur from the surface of the trochanter to the articular surface of the head. This enables the operator to insert the guide pin the right distance and not penetrate the articular surface of the acetabulum. A transverse view should always be obtained to be certain that the pin is in the right position and plane posteriorly.

Recently we have been using a small nail to anchor the Smith-Petersen nail firmly so that it will not work out. This nail is driven through the small opening in the end of the Smith-Petersen nail and on down into the shaft of the femur and in this way will prevent the nail from working out or becoming loose.

The use of the Smith-Petersen nail has done much to save those who are unfortunate enough to have a fracture of the hip from a life of semi-invalidism. The majority of fractures of the hip treated in this way recover. The period of hospitalization is short, averaging around seven days. Then the patient returns home and is treated there until healing takes place, as shown by the x-ray picture. The pin may be removed in a few months or may be left in for an indefinite period of time. So far we have never noted the least sign of trouble from the pin itself.

THE USE OF THE CATHETER IN GYNECOLOGICAL DIAGNOSIS—ILLUSTRATIVE CASES

(W. S. Bainbridge, New York, in *U. & C. Review*, Sept., 1940)

Catheterize a woman before examination.

A woman, 24, married, was sent to one of our state institutions as a manic depressive. Pregnancy was suspected, and the tumor of the abdomen was well above the umbilicus, cervix pushed upward and backward. Breasts were not as developed as would be expected by the size of the abdomen. This case was brought to my examining clinic with the diagnosis of possible pregnancy and ovarian cyst. Catheterization was done with the patient on the table.

The tumor gradually descended. The cervix came well within reach—2,250 c.c. of urine having been withdrawn the tumor entirely disappeared. Early pregnancy was established and corresponded well with the menstrual and glandular picture.

A young woman had been referred to me for a retroposed uterus, which was crowded backward by a tumor anterior to the womb, and to the right by a large mass in the left lower quadrant. Before being sent to me she had had a low enema. I found the rectum empty, but a loop of redundant sigmoid in the left lower quadrant contained a large mass of feces. I ordered a dose of oil by mouth, a colonic irrigation, and just prior to returning for further examination, a bladder catheterization. At second examination the uterus had resumed its normal position, and there was no longer a mass in the left lower quadrant or anterior to the uterus.

Another woman I was called to see with what was diagnosed as tonsillitis and a very large pelvic tumor. The patient was in abdominal distress. Catheterization netted 2,150 c.c. of urine. There was nothing but the full bladder, and, in fact, no tonsillitis in this case.

I was called to a hospital, 400 miles from New York, to operate on a woman under observation for ten days for a slow-growing tumor of the abdomen. The diagnosis had been made by the specialists; it was a clear case and I was simply to proceed with operation. When the patient was under the anesthetic, a few minutes after I had seen her for the first time, I asked the doctor if she had been catheterized. She had not, but that there was no need for this, since she had evacuated 360 c.c. of urine just before going on the table. The tumor was in the middle line, about the size of a human head. After 2,340 c.c. of urine had been withdrawn by the catheter, the tumor entirely disappeared.

A woman, 36, had been sent to a state hospital with the diagnosis of pregnancy, latent syphilis, and manic depressive psychosis. No pregnancy had been determined on x-ray examination, and a diagnosis was made of abdominal tumor. I was called to see the patient and it was suggested that I perform a panhysterectomy. The patient had been passing urine more frequently and in greater quantity than usual. The tumor completely disappeared after 950 c.c. of urine had been withdrawn.

A widow, 56, had been morbid since the death of her husband two weeks before I was called to see her at a Government hospital. I was given the history of a slow-growing abdominal tumor, and a three-plus Wassermann. The neurologist emphasized the luetic condition, the medical man felt it was a gynecological case, and the gynecologist stated that the abdominal tumor extended to the umbilicus, that the uterus was retroflexed and attached to the rectum, that the mass was more to the left than to the right. I examined in the presence of the neurologist, psychiatrist, and medical man. I called the nurse and asked if the bladder had been emptied, and she replied that the patient had been passing a great deal of urine. I requested that catheterization be done, and while I was outside talking with the doctors, 1,000 c.c. of urine was evacuated and the tumor disappeared. My next request was that the patient be given a colonic irrigation. Nearly two large pus basins of fecal matter were removed. The uterus was no longer pushed backward. The great mass in the intestine on the left side was gone; the patient was relieved. Three months later she has not had any trouble since the "tumor" was removed, that she is practically normal and is receiving the usual antiluetic treatment.

TESTOSTERONE PROPIONATE in daily dosage of 50 to 75 mgm. after delivery have been efficient in suppressing lactation.

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THE AGING HEART

An authority¹ on heart disease has written a sprightly article from which much of value may be learned. He tells us our people have largely succeeded in their attempt to grow old and are now much concerned about the fact that they are dying of old-age diseases, which is, perhaps, not inconsistent with a desire to grow old comfortably.

Dublin is quoted as saying that in 1930 abolition of all deaths from cardiovascular-renal disease would have added 7.2-7.5 years to the average life, whereas the disappearance of all deaths from cancer at that time would have added 1.1-1.8 years to the average life.

Any notable decrease in deaths from cardiovascular disease is regarded as unlikely, because, as Warthin has emphasized, normal or biologic death is essentially cardiovascular death; when accelerated senescence becomes pathologic, then old age becomes a disease. "We must decide the limits of normality, or ask, Abnormal in relation to what?" The changes incident to growing old start at birth and are essentially a continuous process. Often structural changes do not define the functional ability of the circulation.

That great pathologist and philosopher Warthin's summary is given in part:

When allowed to be about after confinement to bed, the atrophic heart, which has lost tone through the period of inactivity, cannot recover its oxygenation power, and there results dilatation and sudden death. The only lesions of any significance found in some of these cases are more or less coronary sclerosis, atrophy and fatty infiltration of the heart muscle. Precisely the same conditions will be found in the hearts of old people who have died quietly in bed. It is fair, I think, to ascribe these deaths to senility, although such a term is not an accepted designation as a cause of death. In one case that of an old man in the late 90s, who showed practically no sclerotic changes in any of his arteries, the only pathologic change found in any of his organs was that of simple atrophy in the heart leading to cardiac insufficiency, arterial anemia and passive congestion. I would regard myocardial atrophy and inadequacy as the most probable natural terminal lesion. The purely senile death should be, therefore, a cardiac death. The vital function of the circulation is more likely to cease before that of respiration or of the central nervous system.

Examining people who have exceeded three-score years and ten, the essayist has been impressed with the number of instances in which the heart is not enlarged, the rate is slow, the sounds may have some decrease in intensity, but often there are no murmurs; the blood pressure is normal or

1. H. B. Sprague, Harvard Med. School, in *Med. Ann. D. C.* Feb.

low. X-rays show the heart to be of normal size or small, more horizontal; the aorta's elasticity decreased, its size increased; at about the age of 45 the aorta is for the first time larger than the pulmonary artery.

In the group in which various important electrocardiographic findings were discovered, there was a high degree of inconstancy of these findings on serial electrocardiograms. We are warned not to be too rigorous in our interpretation of the electrocardiogram as indicating cardiac disease, if unsupported by other evidence, and how little the mere factor of age may be expected to alter the electrocardiogram.

The chief types of normal aging individuals are given as two. The first is a small group of individuals in whom the chances of senescence are largely those of desiccation, although some degree of coronary sclerosis will almost invariably be present. The changes in the vessel walls will either not encroach greatly upon the lumen of the arteries, or will be so slow in their development that they will result in occlusion of arterial branches in the heart without gross infarction. The second type of normal we may consider the individual who lives the average life expectancy, but who may not be entirely free from cardiac symptoms or signs during his later years. He may be expected to show coronary atherosclerosis with some occlusion, and if not gross infarction, at least a more diffuse replacement of heart muscles by fibrous tissue.

The range of electrocardiographic normality at all ages is considered greater than we used to think. It still remains questionable if inversion of the T wave in the first lead can ever be considered normal.

Hypertension in itself may be considered evidence of an aging system, but in this condition the diagnosis is generally obvious and the most important evidence is cardiac enlargement. Perhaps frequent premature beats should be looked on with suspicion after middle age, and also high degrees of sinus arrhythmia, especially when associated with displacement of the pacemaker.

The closing paragraph asks for agreement that aging of the heart is mediated almost entirely by coronary integrity, but coronary function is often inexplicable in terms of structural change seen at autopsy; that angina pectoris and congestive failure define cardiac function in coronary degeneration, probably neither occurring without some degree of coronary occlusion in the absence of hypertension; that a careful history must still be considered as giving the best evidence of significant degenerative cardiac disease.

What a lot of sound teaching on an important

subject! Warthin knew and Sprague knows that death is as physiological a process as is birth. Either may become or come to be pathological. Our vital statistics would mean much more if a goodly percentage of deaths were recorded as caused by the wearing-out processes of nature.

There was a time when news that a typhoid patient had suffered a relapse could be depended on to elicit the question, "What did he eat?" Maybe a time will come when it will be as generally known and accepted that one may die from a cause other than disease or trauma, as surely as he may have a relapse in typhoid without having eaten a morsel.

And all of us may well recall that *norma* means rule, average—and ponder "Abnormal as to what?", to the clearing up of the confused idea that *abnormal* and *pathological* are synonyms.

INTELLIGENCE vs. COCKSURENESS IN HERNIA DIAGNOSIS

How many of us have ever heard a teacher express any doubt as to whether or not hernia exists in the person of one just examined? Our own doubts have been frequent, particularly as to persons examined for insurance companies and for the Government.

It's a comfort to find a teacher¹ setting himself down as having difficulty in learning if one have hernia. Evidently this surgeon is not disposed to accept a statement at face value just because it is hoary with age. Here is his teaching:

To instruct the student that an impulse perceptible on coughing or straining while the examining finger is in the external inguinal ring is diagnostic of a hernia is to create a misconception. The insertion of a finger into the external inguinal ring produces a cremasteric reflex and the cord structures are retracted or pushed upward, not infrequently without pain. When the patient is now advised to cough, the contraction of this muscle is overcome and a sudden relaxation results in the production of a thud on the examining finger from the cord structures.

There are cystic and solid tumors, especially lipomatous masses in this region, which undergo a similar retraction owing to the action of the cremasteric muscle, and on its release these tissues may give an impulse and a false impression of a hernia.

The differential diagnosis of hernia is not always an easy matter. Some surgeons challenge its possibility in many instances. To distinguish between a direct, an indirect and a femoral hernia with any degree of accuracy may constitute a surgical problem.

1. S. A. Ziemman, Chicago, in *J. A. M. A.*, Nov. 30th.

I suggest a method which has proved very encouraging in clarifying these difficulties. The method consists in placing the first, second and third fingers over the inguinal region in such a manner that the index finger rests on the so-called weak spot. The middle finger lies along the direction of the inguinal ring, while the third finger covers the femoral canal and the fossa ovalis. With the hand in this position it is possible to perceive a peculiar sliding, pushing motion of a viscus under one or another of the examining fingers when the patient is directed to cough or strain. Thus immediately a direct, an indirect or a femoral hernia is determined. If there is a bulging mass apparent to the eye, the examining hand forces the mass inward and again coughing or straining immediately differentiates the type of hernia present.

The patient is always examined in the upright position, the examiner standing somewhat behind and to the right, using the left hand for a left inguinal hernia. A peculiar gurgling, sliding or slipping motion under one or another finger alone determines the presence of a hernia. The feeling of solid or cystic masses results in an entirely different sensation. Straining is a better method for eliciting the essential diagnostic factor than is coughing.

"WILL HIS HEART STAND THE ANESTHETIC?"

How many times have all of us been asked that question? And how many times have we asked ourselves that question? Beginning with my interne days, I have believed that patients with heart disease stand the anesthetic and all else that goes with a major surgical operation just about as well as do those whose hearts appear to be healthy.

One of our most renowned diagnosticians is credited with having said that he did not know that the family history had ever helped him to make a diagnosis, but that he just could not make up his mind to quit taking family histories. It seems that our examining hearts and talking about the findings in cases in which surgical operation is being considered is somewhat in the same case. Certainly the instances are few in which an operation otherwise clearly indicated should be denied the patient because of any heart findings.

Such examinations should be made and the findings minutely recorded. The heart may be the seat of the disease producing the symptoms which are mistakenly ascribed to the organ whose removal is being contemplated; and, against the chance of disaster in any case, it is well to be in position to answer, Yes, when some lawyer demands to know, Did you examine the heart?

A physician is frequently asked by a surgeon for an opinion as to whether a candidate for sur-

gery is a suitable candidate—in the version of the laity, "Whether his heart will stand the anesthetic." Often there is no organic heart disease present, or the blood pressure elevation is found to be due to the nervous strain incident to the hazards of the situation.

"Too frequently," so says one¹ of these consultants, "the medical man is not called upon until the appendix or gallbladder, for example, has been investigated surgically and found to be normal." The pain of acute pericarditis may be referred to the abdomen. A patient with mitral stenosis in which the onset of auricular fibrillation was attended by acute right heart failure, and pain and tenderness over the liver had been sent to the hospital with a diagnosis of acute cholecystitis; medical consultation was requested because of the irregular pulse. The arrhythmia stopped of itself in 24 hours and the patient was spared an unnecessary operation.

Commonly the medical man is called upon to decide whether operative procedures are justified in patients who have some form of heart disease. Then one must seek to answer these questions:

Is the surgical condition so grave that, no matter what the risk, an operation must be performed?

Can the cardiac condition be improved by delaying the operation when it is not immediately urgent?

In those conditions in which operation is not imperative, will surgical intervention be worth while? Will the prospective gain in comfort to the patient balance the risk?

It is pleasing to see it plainly stated that heart patients withstand surgical procedures well; to learn that this doctor doubts if the mortality figures in young persons with well compensated heart disease are raised by surgical procedures. There is little if any evidence that, in the absence of clear signs of heart failure, any sound heard over the heart has any significance as to prospect of surviving an operation.

Heart cases that have undergone surgical procedures, listed as major, at the Hospital of the University of Maryland during the past 18 months were 78; and of these 78 patients, 14 (18%) died. The highest mortality rate was found in the arteriosclerotic group. The average age of this group was 68 years, and there were 24 patients, of whom 7 (29%) died. The cause of death was pneumonia in three instances, pulmonary infarct in one, septicemia in one, surgical shock in one, and in one it was not determined. Twenty-nine patients with hypertension and some degree of arteriosclerosis were operated upon, and of these 4 died, a mortal-

1. W. S. Love, Baltimore, in *Med. Annals Dist. Col.*, April.

ity rate of 13.8 per cent. Two of these patients died following craniotomies, performed in one instance for subdural hemorrhage and in the second for a brain tumor. A third patient died following a nephrosclerosis. If we discard these three cases, the mortality rate falls to 3.4 per cent. Of nine cases of hyperthyroidism complicated by cardiac enlargement, hypertension or arteriosclerosis—one, two or all three—deaths followed subtotal thyroidectomy in two cases. Of sixteen patients with rheumatic cardiovascular disease, only one died following operation. This patient had mitral stenosis and auricular fibrillation, and a mid-thigh amputation was necessitated because of embolism to the femoral artery.

Most deaths occurred in the aged, or in those in whom the illness requiring operation was of an unusually grave nature.

We would like to have more reports bearing on this subject. Very likely they may be found by diligent search. Already we have enough evidence of the ability of the average diseased heart to go through a major operation without throwing up its job to give us confidence to advise our patients in need of surgical relief to accept operation.

DON'T RUN FOR A PULMOTOR: USE YOUR HEAD AND HANDS

THERE is a great tendency to demand a machine for every occasion. An answer to one of these demands is the pulmotor. And while awaiting the arrival of the pulmotor the patient dies.

Nobody knows more about respiration and resuscitation than Yandell Henderson of Yale. He tells¹ us:

The time lost in obtaining and adjusting mechanical devices may mean the difference between life and death of the victim. Policemen, firemen, seamen, miners, boy and girl scouts, college students should be trained in the application of the manual (Schäfer) method.

If the vital machine has fully stopped it cannot be restarted; it is not like an automobile motor to be started by cranking. What resuscitation does—for example in the case of drowning—is to prevent the machine from coming to a full stop. For this purpose the essential is a renewed supply of oxygen while the body still retains some of its tonus and the heart is still beating.

In brief, the best method of resuscitation from drowning and electric shock is prone pressure artificial respiration supplemented by inhalation of carbon dioxide and oxygen. The best method of resuscitation from carbon monoxide asphyxia is inhalation of carbon dioxide and oxygen, initiated in cases of severe involvement by prone pressure artificial respiration.

The Schäfer method of performing artificial respiration is, like most valuable procedures, very simple: The patient flat on his belly and chest with forehead on one of his arms; straddle the patient with your knees on either side of patient's hips, and press with both hands firmly upon the back over the lower ribs; then raise your body slowly, at the same time relaxing the pressure. Repeat this backward and forward movement about every five seconds. (Have some one hold a watch. The tendency is to work entirely too rapidly.)

If every doctor who reads this would ask his paper to publish it in a conspicuous place, and if every lifeguard, policeman, fireman and boy scout were so instructed, a good many of the lives which are due to be lost this summer would be saved.

AS PUZZLING AS HESS' TRIP

WE learn from The Rockefeller Foundation Review for 1940 that, just before he died, Lord Lothian, British Ambassador to the United States, asked the Rockefeller Foundation whether it would consider giving a number of British medical students the opportunity to complete their training in the medical schools of the United States and Canada. While medical students in England are not subject to draft, the air raids throughout Great Britain have imposed excessive demands upon all medical schools and teaching hospitals. Destruction has been extensive. In London, at this writing, only one teaching hospital has escaped bombing. The conditions for thorough and adequate teaching in medicine are therefore severely deranged. A considerable number of the teachers, moreover, have been called to military or special civilian duties, and, together with the profession as a whole, are exposed to injury and death in a measure that heightens the importance of adequate training for those who will be their successors. Lord Lothian's suggestion was warmly supported by leading British medical authorities, and as a result the Foundation appropriated \$100,000 to initiate the plan.

And Lord Lothian was a disciple of Mary Baker G. Eddy!

True, a member of Congress from North Carolina who declined reflection just a few years ago had an osteopath look after his health, and a writer in the *American Journal of Surgery* (Dec., 1940) advises treatment of corns "by a skilled chiropodist"; still, for a member of a sect that denies the very existence of disease and obstructs and impedes Medicine to the utmost of its ability—for such a one to ask any institution to train medical students: that takes the cake.

POST MORTEM CASAREAN SECTION.—Only 13 successful cases were reported in the world in the past 10 years—5 of these in the U. S.—Moran, in *Iowa State Med. J.*

1. *Journal of A. M. A.*, May 5th.

ANENT DR. JAMES K. HALL AND THE AMERICAN PSYCHIATRIC ASSOCIATION

By BEVERLEY R. TUCKER, M.D.

IT IS RARE in this mundane world when the man and the honor come synchronously together. The man is one of birth in Iredell County, North Carolina, the son of a physician, a graduate of the University of North Carolina, who took his medical course at Jefferson Medical College in Philadelphia. He was then an intern at the Philadelphia Polyclinic and thereafter came to be a resident physician at the Morganton State Hospital. While serving in this capacity he learned much. He even operated successfully on a case of acute appendicitis without previous especial surgical experience. He proved an excellent doctor of the heart and lungs and kidneys and in the diseases of the aberrated mind he found scope for the exercise of his inherent understanding of human nature, his psychologic and psychiatric interest and his philosophical contemplations.

Practicing neuropsychiatry in Richmond, I realized the need of a private psychiatric sanatorium in this vicinity, and I turned to Paul V. Anderson, with whom I had fought the battle of extramural activities of interns in the great City of Philadelphia. Ere long he and James K. Hall came to look Richmond over and the present site of Westbrook Sanatorium was selected. Here since 1911 they have both worked and wrought exceeding well. North Carolina's loss was not so much Virginia's gain as was the fact that both states gained and profited by their sons and adopted sons.

Hall has pursued the even tenor of his own selected way. He does not wear a hat, an overcoat, or a watch, but he always keeps his shirt and pants on, so to speak. He has never hurried in his life, yet he has accomplished far more than the hustlers. He may start a speech or paper in the nebulous realms of anywhere, but soon you are startled by having the probe of his subject injected right into your prefrontal intellectual area, the emotional centers of your hypothalamus, or the cockles of your heart. In speaking his delivery is deliberate, but you will never go to sleep unless you are suffering from narcolepsy. And he writes with a diamond pointed pen dipped into an ink of liquid gold full of sunshine and vitamin D.

You may not agree with Hall on all occasions, but you cannot help admiring him, and if you are in close contact with him you will love him. He is a man whom you may consciously analyze in all the ways you are familiar with and come to no conclusion except that he is a real man, for he is sometimes, oftentimes, unpredictable, but beware—while you have been consciously analyzing him he has sub- or unconsciously sized you up to your

weal or to your woe. Hall is a man of physical, moral and intellectual courage. He has locked the door on a younger and presumably stronger man and fought it out in the good old Anglo-Saxon fashion. He does not hesitate to tell a man what he thinks of a proposition or of him personally. He has expressed unpopular opinions without caring a whit for fear or favor. And Hall is a great friend whether you have "the boast of heraldry and the pomp of power" or be you "ever so humble."

The American Psychiatric Association has grown from small beginnings to a huge membership with nearly fifteen hundred registering in their recent meeting in Richmond. It has performed many miraculous feats besides growth, but it never did a better thing than its election of James K. Hall as its president. In this selection it not only obtained an executive of marked ability, but it recognized a great physician, a profound philosopher, an honest man, and a cultured gentleman. And, alas, this can not always be said of those elevated to high office. Dr. Hall did not seek this office—in fact he worked against his being considered, even declined the offer—and only accepted it upon the obtrusion and insistence of his friends and admirers.

I have met many men in my time, but James K. Hall is one of the few individualists that I have ever known, and I am orthodox enough to believe that the great directing Spirit of the multiple universes, whom we call God, had something especial to do with making him the kind of individual he is.

CENTENNIAL CELEBRATION

The Department for Mental and Nervous Diseases of the Pennsylvania Hospital at 4400 Market Street in Philadelphia celebrated its centennial on June 11th and 12th. On the eleventh the staff of the Hospital held a symposium on Recent Advances in Psychiatry. On the twelfth there was a public reception and an inspection of the building and facilities and grounds; and addresses by Dr. Earl D. Bond and Dr. Edward A. Strecker. Dr. Lauren H. Smith is Physician-in-Chief and Administrator of the Hospital; Dr. Earl D. Bond is Medical Director of Research.

In 1841 Dr. Thomas S. Kirkbride was Superintendent of the Hospital—its first superintendent—and he remained its head for many years. He so impressed himself and his humanitarian ideas upon those charged with the care of the insane that he came to be looked upon as the ideal superintendent, and his influence stamped itself for years even upon State Hospital Architecture. He probably planned, through an architect, the first State Hospital in North Carolina—at Raleigh. It is well known that the Building Committee of the State Hospital at Morganton, before making any other move, consulted Dr. Kirkbride. He promptly referred them to Mr. Samuel Sloan, the Philadelphia architect who planned the Hospital at Morganton as a Kirkbride Building.

The centennial of the Pennsylvania Hospital in Philadelphia constituted an event in American medical history.

NEWS

AMERICAN CONGRESS OF PHYSICAL THERAPY

INSTRUCTION COURSE THROUGHOUT SESSION TO BE HELD
IN WASHINGTON ..

The 20th annual will be held September 1st to 5th at The Mayflower, Washington.

The mornings will be devoted to the annual instruction course, the afternoons and evenings to the research and clinical sessions. The seminar and convention proper will be open to all physicians and qualified technicians. The program will be of interest to the general practitioner as well as to the specialist in physical therapy.

For information concerning the seminar and preliminary program of the convention proper, address

The American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

VIRGINIA SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Dr. Mortimer H. Williams, of Roanoke, was elected president, Dr. Guy R. Fisher, of Staunton, president-elect, and Dr. Meade Edmonds, of Petersburg, was chosen secretary and treasurer, at the 22nd annual meeting held in Richmond, May 20th. Taking part in the program were Dr. James A. Babbitt, of Philadelphia; Dr. Edmund S. Spaeth, of Philadelphia; Dr. Tom W. Moore, of Huntington, W. Va.; Dr. E. Tribble Gatewood, of Richmond; Dr. M. H. Williams, of Roanoke; Dr. William P. McGuire, of Winchester; Dr. George M. Maxwell, of Roanoke; Dr. Elbyrne G. Gill, of Roanoke, and Dr. Francis H. McGovern, of Danville.

At the ninety-seventh annual meeting of the American Psychiatric Association in Richmond on May 5th-9th, the following officers were elected:

President: Dr. J. K. Hall, Richmond.

President-Elect: Dr. Arthur H. Ruggles, Providence, Rhode Island.

Secretary-Treasurer: Dr. Winfred Overholser, Washington, D. C.

The Association will meet in Boston in May, 1942. The centennial meeting will probably be held in Philadelphia in 1944, where thirteen superintendents of state hospitals organized the Association in 1844. It is our oldest national medical association.

THE AMERICAN COLLEGE OF PHYSICIANS, recently in session in Boston, will meet in April, 1942, at St. Paul. Dr. Roger S. Lee, Boston, is president, and Dr. James E. Paulin, Atlanta, president-elect. Five physicians from Virginia were inducted into Fellowship.

THE AMERICAN PHARMACEUTICAL ASSOCIATION has taken over and made a national shrine of the old Hugh Mercer Apothecary Shop at Fredericksburg, Virginia. Amongst its customers were George Washington and John Paul Jones, and it was the meeting place of many who became famous in the nation's history. Dr. Mercer closed his shop when he entered the Revolutionary War, in which he sacrificed his life in the battle of Princeton.

NEW OFFICERS OF THE ROANOKE ACADEMY OF MEDICINE are: Dr. M. Williams, president; Dr. D. B. Stuart and Dr. A. M. Groselove, vice presidents; Dr. H. B. Stone, Jr., secretary-treasurer.

THE MEDICAL SOCIETY OF VIRGINIA will be in annual session at Virginia Beach October 6th-8th, with headquarters at the Cavalier Hotel.

The second edition of the DIRECTORY OF MEDICAL SPECIALISTS is in preparation and should be ready for delivery by February, 1942. The volume will contain highly epitomized information about each of those listed by the fifteen Boards as medical specialists, and will include almost 20,000 names. Dr. Paul Titus, Highland Building, Pittsburgh, is Directing Editor, and he is assisted by the secretaries of the fifteen Boards.

A portrait of Dr. GEORGE WOODFORD BROWN was presented to the Eastern State Hospital by his friends on May 16th. Dr. Brown has been Superintendent of that institution, the first Hospital for the Insane in English-speaking America, for more than thirty years.

Dr. N. T. ENNETT, Health Officer of Pitt County, was made president of the North Carolina Public Health Association at its recent meeting at Pinehurst.

Drs. W. M. SCRUGGS and L. E. FLEMING, Charlotte, recently completed and are now occupying their completely appointed Clinic Building on Hawthorne Lane.

Dr. W. DEB. MACNIDER was toastmaster at the formal dinner of the Conference on Mental Health in Later Maturity held in Washington, May 23rd-24th.

Dr. CHARLES M. CARAVATI, of Richmond, is spending several months in graduate work at the Johns Hopkins Hospital. He is preparing for specialization in Gastro-Enterology and Nutrition.

Dr. B. H. HARTMAN announces the reopening of the offices of the late Dr. G. W. KUTSCHER, for practice limited to Infants and Children, at 176 Woodfin Street, Asheville, North Carolina.

Dr. GEORGE R. WILKINSON, of Greenville, S. C., announces the removal of his offices to 300 East North Street.

Dr. CALVIN SANDISON, Atlanta, formerly associated with Dr. Lawson Thornton, announces the opening of offices in Suite Ten of the Doctors Building to continue his practice of Orthopedic Surgery.

Dr. ALONZO MYERS, Charlotte, announces the removal of his offices to Suite 424 Professional Building.

Dr. WYNDHAM B. BLANTON, of Richmond, delivered the address to the graduating class of the Medical College of the State of South Carolina, Charleston, on June 4th. Dr. Blanton is Professor of Clinical Medicine in the Medical College of Virginia.

Dr. MASON ROMANE has been elected all-time City Health Officer of Petersburg.

Dr. FRED WHARTON RANKIN, President-elect of the American Medical Association, is a native of North Carolina. He was born at Mooresville in 1886. For a number of years Dr. Rankin was a member of the Mayo Clinic. A dozen years ago he established himself at Louisville in the practice of surgery.

North Carolina has the unique honor of having, in one year, two of her sons holding highest offices in the gift of the nation's medical men. The other is Dr. James K. Hall, new President of the American Psychiatric Association.

Dr. W. Z. BRADFORD and Dr. W. B. BRADFORD, Charlotte, announce the removal of their offices, and the opening of the Bradford Clinic at 1509 Elizabeth Avenue.

DR. RAYMOND S. CRISPELL, of the Duke Hospital, Durham, N. C., has been ordered to active duty in the U. S. Navy at the Naval Air Training Station, Pensacola, Fla. He has obtained a year's leave of absence from Duke University, and he reports at Pensacola June 15th. As a lieutenant commander in the Medical Corps, Dr. Crispell will teach Neuropsychiatry and will participate in the research and in the clinical work in Psychology and Psychiatry at the Naval School of Aviation Medicine. He will also act as neuropsychiatrist to the Naval Dispensary and Hospital at Pensacola, and in these various capacities he will be engaged in the work that has been done for a number of years in the Personality Studies associated with the selection and with the fitness of naval aviators.

DR. PACHERO SILVA, of Brazil, attended the recent meeting in Richmond of the American Psychiatric Association while on his way to visit the School of Medicine of the University of North Carolina.

DR. CLAUDE C. COLEMAN, of Richmond, has been appointed a member of the Board of Visitors of the College of William and Mary.

MARRIED

Dr. Jean McNutt Martin, of Middlebrook, Augusta County, Virginia, and Mr. Ralph Allen Glasgow, of Roanoke, were married on May 30th. Mr. Glasgow is an attorney at Roanoke.

Dr. Bradford Sherwood Bennett, of Lowville, New York, and Miss Lenoah Araminta Long, of Radford, Virginia, were married on June 4th.

Dr. Henry Boone Grant, of Rocky Mount, and Miss Elizabeth Cheatham Applegate, of Halifax, North Carolina, on May 20th.

Dr. Joseph Samuel Holbrook, of Statesville, and Miss Nancy Wheeler Cox, of Raleigh, were married on May 3rd.

Miss Frances Rice Hall, of Roanoke, Virginia, and Dr. Jerome Bostic Hamer, of Charlotte, North Carolina, May 17th.

DEATHS

Dr. William T. Oppenheimer, Jr., of Richmond, died on April 20th. He was a graduate in 1917 of the Medical College of Virginia, and he was active during the first World War in the United States Navy.

Dr. George Johnson Tompkins, for many years a leading specialist in eye, ear, nose and throat work in Lynchburg, died of a heart attack on April 2nd.

Dr. Richard H. Peake, of Norfolk, a graduate of the Medical College of Virginia's class of 1915, died on March 6th, at the early age of fifty-two.

Dr. Benjamin Franklin Babb, 77, retired physician of Ivor, Virginia, died on March 31st. He was graduated by the Medical School of the University of Maryland in 1892.

DR. BENJAMIN MCGUGAN, 53, a graduate of the University of Maryland's Medical Class of 1912, died suddenly in his office at Morven, North Carolina, on the 23rd of May.

UNIVERSITY OF VIRGINIA

DOCTORS OF MEDICINE, JUNE 9TH, WITH APPOINTMENTS AS INTERNE OR OTHER POSITION

Armistead, George Clayton, Jr., B.S., University of Virginia, Roanoke, New York Hospital, New York City.

Bain, James Britton, B.S., University of Virginia, Portsmouth, City Hospital, St. Louis.

Berner, Benj. Walter, B.S., University of Virginia, Paterson, N. J., University of Virginia Hospital, University.

Bigham, Roy Stinson, Jr., B.A., Davidson College, Charlotte, N. C., University of Virginia Hospital, University.

Booker, James Motley, B.A., University of Virginia, Lottsburg, Hospital Division, Medical College of Virginia, Richmond.

Bray, William Edward, Jr., B.S., University of Virginia, University, University of Virginia Hospital, University.

Ruckner, Walter, II, Roanoke, Baroness Erlanger Hospital, Chattanooga.

Chalmers, Henry Rives Coleman, Phenix, Harrison Memorial Methodist Hospital, Fort Worth.

Cleveland, Fred Edward, Jr., Swoope, Virginia Mason Clinic, Seattle.

Coleman, John Gordon, B.S., University of Virginia, Lexington, Ky., University of Virginia Hospital, University.

Couper, John Lee, B.S., Virginia Military Institute, Lexington, St. Luke's Hospital, New York City.

Dandridge, William Robert, B.A., Emory and Henry College, Kermit, W. Va., University of Virginia Hospital, University.

Day, Clara Lyman, B.A., Vassar College, Hartford, Cornell Division, Bellevue Hospital, New York City.

Dunn, Edward Thomas, Jr., B.S., University of Virginia, Clifton Forge, St. Francis Hospital, Pittsburgh.

Face, Edward Gill, Jr., Norfolk, Post-Graduate Hospital, New York City.

Garcia-Bird, Jorge, Fajardo, Puerto Rico, University of Virginia Hospital, University.

Giles, Robert Harrison, Jr., B.S., University of Virginia, Roanoke, Baroness Erlanger Hospital, Chattanooga.

Hand, George Parker, Jr., Norfolk, United States Marine Hospital, Norfolk.

Hardie, George Anderson, B.S., Alabama Polytechnic Institute, Auburn, Touro Infirmary, New Orleans.

Hawkins, William Smith, B.S., Furman University, Greenville, S. C., University of Minnesota Hospital, Minneapolis.

Helbert, Hollen Garber, B.A., Bridgewater College, Harrisonburg, Church Home and Infirmary, Baltimore.

Hendricks, Willis Merriman, B.S., University of Virginia, Roanoke, Vanderbilt University Hospital, Nashville.

Herring, Alvah Livingston, Jr., B.S., University of Virginia, Richmond, Hospital Division, Medical College of Virginia, Richmond.

Johnson, Marcellus Alexander, III, B.S., University of Virginia, Roanoke, Virginia Mason Clinic, Seattle.

King, Thomas Cobb, Jr., B.S., University of Virginia, Anniston, Ala., City Hospital, Cleveland.

Kolodny, Abraham Lewis, Norfolk, South Baltimore General Hospital, Baltimore.

Larkum, Newton Wheeler, B.S., Bates College; Ph.D., Yale University, Charlottesville, Walter Reed Hospital, Washington.

McDaniel, Samuel Marshall, Jr., University, Duke University Hospital, Durham.

McKee, Kelly Tilson, B.A., Emory and Henry College, Bristol, General Hospital, Cincinnati.

Mangus, Lewis Edward, B.A., Washington and Lee University, Vesuvius, St. Luke's Hospital, Bethlehem, Penn.

Morris, John Richard, Jr., B.S., University of Virginia,

Charlottesville, Strong Memorial Hospital, Rochester, New York.

Moss, James Mercer, Arlington, University of Virginia Hospital, University.

Mullen, Edward Eugene, Smithfield, N. C., St. Luke's Hospital, New York City.

Murray, James Spicer, Jr., B.A., Yale University, Baltimore, Indianapolis City Hospital, Indianapolis.

Orzac, Edward Seymour, Norfolk, Wilkes-Barre General Hospital, Wilkes-Barre, Penn.

Platt, Joseph Lawson, B.S., Emory and Henry College, Emory, University of Virginia Hospital, University.

Robertson, Rowland Hatton, Jr., Suffolk, Lewis-Gale Hospital, Roanoke.

Sawyers, Thomas McCreery, B.S., University of Virginia, Hinton, W. Va., Virginia Mason Clinic, Seattle.

Schilling, Charles D., B.A., Amherst College, Glen Cove, N. Y., University of Virginia Hospital, University.

Shelton, Aubrey Lawrence, Norfolk, Hospital of St. Vincent de Paul, Norfolk.

Shultz, Philip Laub, Charlottesville, University of Virginia Hospital, University.

Sinclair, Cecil Lowry, B.S., Virginia Military Institute, Hampton, Charity Hospital of Louisiana, New Orleans.

Sproul, Alexander Erskine, B.A., Washington and Lee University, Staunton, Union Memorial Hospital, Baltimore.

Stoddard, Spotswood Douglas, B.S., Hampden-Sydney College, Savannah, St. Elizabeth's Hospital, Richmond.

Stone, Carey Addison, Jr., Crewe, Central Dispensary and Emergency Hospital, Washington.

Sulfridge, Hugh Leander, Jr., B.S., University of Virginia, Charlottesville, Harper Hospital, Detroit.

Trapnell, John Mackey, Jr., B.S., University of Virginia, Charles Town, W. Va., Grady Memorial Hospital, Atlanta.

Warren, Allan Bevier, Jr., Orange, Johns Hopkins Hospital, Baltimore.

Whitehead, Philip Cary, B.S., United States Military Academy, Chatham, General Hospital, Montreal.

Whitman, William Rush, Jr., B.S., Hampden-Sydney College, Roanoke, Emory University Hospital, Atlanta.

Williams, Armistead Dandridge, B.S., University of Virginia, Richmond, Duke University Hospital, Durham.

Willis, Betty Gordon, B.A., Agnes Scott College, Culppeper, Gallinger Municipal Hospital, Washington.

Yates, Harold Taylor, University, University of Virginia Hospital, University.

Yuter, Daniel, Charlottesville, Sinai Hospital, Baltimore.

Dr. Edwin P. Lehman participated in a Post-Graduate Course in Surgery conducted at Waycross, Georgia, in April. The following discussions were presented: April 7th, Surgical Shock; April 9th, Water Balance in Surgery; April 10th, The Significance of the Cholecystogram; and on April 11th, Hyperthyroidism. At a meeting of the Eighth District Medical Society of Georgia on April 8th, he spoke on the subject, Heparin in the Prevention of Peritoneal Adhesions.

Dr. D. C. Smith attended the meeting of the American Dermatological Association in New Orleans and on April 10th he presented a paper on Acanthosis Nigricans.

On April 15th, Dr. E. C. Drash addressed the Rockingham Tuberculosis Association and the members of the School of Nursing of the Rockingham Memorial Hospital in Harrisonburg. His subject was The Conquest of Tuberculosis.

On April 15th, Dr. Sydney W. Britton gave a lecture before the Staff and Graduate School of Iowa State College at Ames. He spoke on Form and Function in Primitive Mammals.

At the meeting of the American Physiological Society in Chicago on April 18th, Drs. E. L. Corey and S. W. Brit-

ton presented a paper entitled The Antagonistic Action of Desoxycorticosterone and Antidiuretic Principle of the Posterior Pituitary Gland.

Dr. Lawrence T. Royster attended the Region No. 2 meeting of the American Academy of Pediatrics in Richmond, and on April 25th gave a broadcast for the Academy on the subject, The Importance of Periodic Examination of Children.

Dr. John M. Meredith attended the meeting of the American Society of Neurological Surgeons in Richmond on May 1st and 2nd and read a paper on Experimental Head Injuries: a. The Inefficacy of Lumbar Puncture for the Removal of Erythrocytes from the Spinal Fluid; b. Can the Site and Degree of Intracranial Trauma Be Determined by Spinal Fluid Erythrocyte Counts?

At the meetings of the Virginia Academy of Science in Richmond on May 1st to 3rd, the following members of the Faculty of the Department of Medicine of the University of Virginia presented papers: The Synchronization of Cerebro-Cortical Potentials, by Dr. Charlton Gilmore Holland, Jr.; Study of a Case of Osteosclerosis with Myeloid Leukemia, With Special Reference to the Extensive Extramedullary Blood Formation by Drs. H. E. Jordan and James K. Scott; Autopassive Local Sensitization and desensitization by Drs. Oscar Swineford, Jr., and W. Roy Mason, Jr.; Chemistry and Sulfonamide drugs by Dr. Alfred Chanutin; Heparin and Peritoneal Adhesions by Dr. Floyd Boys; and An Analysis of Hormonal Influences on Fluid Balance by Drs. S. W. Britton and E. L. Corey.

Dr. Charlton Gilmore Holland, Jr., attended the organization meeting of the American Federation for Clinical Research in Atlantic City on May 5th and discussed his work on Electroencephalographic Studies in Myoclonia.

On May 6th, Drs. J. Edwin Wood, James K. Scott and John L. Guerrant presented a paper on Further Observations on Blood Pressure, Weight and Diet in Normal Hypertensive Dogs, at the meeting of the Association of American Physicians.

Drs. George C. Ham and Eugene M. Landis attended the meeting of the American Society for Clinical Investigation and delivered a paper on A Comparison of Pituitrin and Antidiuretic Substance in Human Urines and Placentas.

Dr. W. M. Craig, Professor of Neurosurgery at the Mayo Clinic, visited our Medical School on May 5th.

The Department of Physiology was awarded a research grant of \$2,000 by the Committee on Research in Endocrinology of the National Research Council, for investigations on the function of the suprarenal under the direction of Dr. Sydney W. Britton.

On May 7th, Dr. Staige Davis Blackford addressed the Augusta County Medical Society on the subject, Medical Treatment of Peptic Ulcer.

At the meeting of the West Virginia State Medical Association in Charleston on May 14th, Dr. T. J. Williams spoke on The Management of the Toxemias of Late Pregnancy. On May 15th, he addressed the West Virginia Obstetrical and Gynecological Society on the subject, Experience in Postpartum Sterilization.

On May 1st, Dr. T. J. Williams participated in the Post-Graduate Course in Medicine and Surgery for the Loudoun County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Toxemias of Pregnancy. On May 15th, Dr. H. B. Mulholland discussed The Newer Phases of Pneumonia Treatment.

At the meeting of the American Psychiatric Association in Richmond on May 5th, Drs. David C. Wilson and

Charlton Gilmore Holland, Jr., presented a joint paper on Electroencephalographic Studies in Myoclonia.

MEDICAL COLLEGE OF VIRGINIA

Mr. George W. Bakeman, who has been in charge of the Paris office of the Rockefeller Foundation for a number of years, has been appointed Assistant to the President.

Commencement exercises closing the one hundred third session of the college were held June 3rd.

There are 172 candidates for graduation; 74 in medicine, 35 in dentistry, 29 in pharmacy, and 34 in nursing. Dr. Theodore Meyer Greene, McCosh Professor of Philosophy, Princeton University, will deliver the Commencement address. The Commencement sermon will be given by Dr. Vincent C. Franks, Pastor, St. Paul's Church, Richmond.

Dr. William Newton Hodgkin, an alumnus of the school of dentistry of the college, class of 1912, and a member of the Council on Dental Education of the American Dental Association, will be awarded the honorary degree of Doctor of Science at the Commencement exercises.

HYPERTENSION.—In any case of hypertension, especially in a young person with a previous history of pyelitis, we owe it to the patient to investigate both kidneys.—J. F. Casey, Boston, in *Clin. Med.*, Jan.

Lyovac (Latrodectus Mactans), Sharp & Dohme, is reported by Voss (in *Clinical Medicine*, May) as far the most satisfactory remedy in cases of bite of the Black Widow.

EXOPHTHALMOS.—The cause of that of Graves' disease is unknown.

BOOKS



ESSENTIALS OF DEMOCRACY, by Norman Tobias, M. D., Senior Instructor in Dermatology, St. Louis University. J. B. Lippincott Company, Philadelphia; London; Montreal. 1941. \$4.75.

Very well is it said that, since most skin diseases look alike to the beginner, diagnostic features are emphasized. The text is not burdened with historical information or other matter of no practical use in diagnosis and treatment.

The groupings are such as to be of most help—the *erthema* group, the *eczema* group, drug eruptions, the *pyoredmas*, diseases due to vegetable parasites, diseases due to animal parasites, diseases due to psychic disorders and so on.

A handy, reliable volume to meet the needs of the practitioner in this field.

TEXTBOOK OF PEDIATRICS, by J. P. Crozer Griffith, M.D., Ph.D., Emeritus Professor of Pediatrics in the University of Pennsylvania; and A. Graeme Mitchell, M.D., B. K. Rachford Professor of Pediatrics, College of Medicine, University of Cincinnati. Third edition, revised and reset. W. B. Saunders Company, Philadelphia and London. 1941. \$10.00.

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which will include in its scope, as does the book, the maintenance of good health, as well as the prevention and cure of disease.

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Diagnostic measures are plainly stated and detailed treatment described in a way to convince the reader and to enable him to put the instruction to use.

A well-balanced, authoritative work.

A PRACTICAL MANUAL OF DISEASES OF THE CHEST, by MAURICE DAVIDSON, M.A., M.D., Oxon. F. R. C. P. Lond., Physician to the Brompton Hospital For Consumption and Diseases of the Chest (sometime Dean of the Brompton Hospital Medical School), second edition. *Oxford University Press*, London: Humphrey Milford. 1941. \$13.50

Radiology of the chest is dealt with before ordinary means of examination; but it is emphasized that the new means has not replaced the old, that the two are interdependent. Conspicuous are the chapters on the relation of chest disease to general medicine, diseases of the upper respiratory tract, bronchiectasis, foreign bodies in the bronchi, asthma, specific non-tuberculous infections of the lung, differential diagnosis, oxygen therapy, prescriptions.

The book brings forward all that is best from the old, and adds all that is valuable in the new, in diagnosis and management of diseases of the chest.

FRACTURES, by GEORGE PERKINS, M.C., M.Ch., Oxon., F.R.C.S., Assistant Orthopedic Surgeon to St. Thomas's Hospital. *Oxford University Press*, London. Humphrey Milford. 1940. \$6.50

There is no preface, no foreword. The author is not wasteful of words, and he writes with the confidence of knowledge. None other would dare say all he has to say on the repair of bone on one page; the same as to methods of obtaining fixation; less than a page on treatment of non-union.

There is no hocus pocus. Treatment is either so and so, or "none is needed." Of fracture of the clavicle distal to the coraco-clavicular ligament: "No treatment is required. A sling for a few days, and active movements of the shoulder are begun immediately."

Every general practitioner should have a copy, and most general surgeons.

A TEXTBOOK OF OPHTHALMOLOGY: by SANFORD R. GIFFORD, M.A., M.D., F.A.C.S., Professor of Ophthalmology, Northwestern University Medical School, Chicago; Attending Ophthalmologist, Passavant Memorial and Cook County Hospitals. Second edition, revised. 470 pages with 215 illustrations. Philadelphia and London: *W. B. Saunders Company*, 1941. Price \$4.00.

The second edition has taken due cognizance of the great advances made, in therapy particularly, since the appearance of the first edition just three years ago. The author believes that every physician should be able to carry out a systematic examination of the eye, and to take care of most of the eye conditions of his patients; and the author tells the general practitioner and medical student how these things should be done.

Instruction is given in external and internal and functional eye examination, refraction, diseases of the adnexa and all the elements of the eye, injuries to the globe, ophthalmologic therapy, and the eye in general diseases.

If this is not the very best book in this field, it is certainly one of the best.

CLINICAL ASPECTS OF THE ELECTROCARDIOGRAM. Including the Cardiac Arrhythmias, by HAROLD E. B. PARDEE, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College; with 219 illustrations on 102 figures; 4th edition revised. *Paul B. Hoeber, Inc.*, New York and London. 1941. \$5.75.

The new edition is really a new edition. The previous edition has been amended and corrected and added to, to meet the advances in technical procedures and the increased knowledge of heart disease diagnosis, until a virtually new book has been produced. As was true of the three preceding editions, the fourth is a faithful setting forth of the electrocardiography of its year of publication.

A brief note is given on the development of this means of diagnosis. The normal ecg. is analyzed, then those characteristics of various disease conditions of the heart.

There is some account of technical difficulties which may be encountered with helpful suggestions as to the means of overcoming them. In the appendix is described a method of filing and indexing the records.

The author does not think of electrocardiography as an infallible means of diagnosis, but as one of the valuable means, much more valuable in some circumstances than in others, and he undertakes to group the problems which the physician should refer to the electrocardiograph.

THE STORY OF CLINICAL PULMONARY TUBERCULOSIS, by LAWRASON BROWN, M.D., Late Director of Trudeau Sanatorium. *The Williams & Wilkins Company*, Mt. Royal & Guilford Aves., Baltimore, Md. 1941. \$2.75.

Perhaps no one was ever better qualified to write the story of the disease which was for centuries mankind's greatest plague, which, counting morbidity and mortality, may still hold that place.

The author divides his story into the four periods suggested by Osler: 1) From the time of

earliest records to the middle of the 17th century; 2) the latter half of the 17th and the whole of the 18th; 3) the first three quarters of the 19th; and 4) to the present.

Under Part I are described the doctor's visit in 1700, in 1800, in 1900.

Part II has chapters on: Laennec and His Successors and the Beginnings of Early Diagnosis, Early Publications in Germany and Austria, The Diffusion of Knowledge in England, Diagnosis in America, Diagnosis by X-rays (by Homer L. Sampson.)

Part III's two chapters are devoted to: Artificial Pneumothorax The Development of Surgical Methods in Treatment (by Edward W. Archibald).

Part IV informs in detail on: Laennec and His Writings, The Story of the Stethoscope, Early Medical Journals, Bibliography.

The doctor who would understand how we have come so far in conquering tuberculosis and so grasp what lies before us must be familiar with the story Dr. Brown tells. For the layman of fair intelligence and education here is as fascinating a tale as may be seen on a screen; and hardly a one in either group but has a personal interest through tuberculosis close to him.

SYNOPSIS OF DISEASES OF THE HEART AND ARTERIES, by GEORGE R. HERMANN, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas. Second edition. *The C. V. Mosby Company*, Pine Boulevard, St. Louis, Mo. 1941. \$5.00.

The author says this edition is the result of further experience with the help of suggestions from critical colleagues and reviewers. Only the essentials of diagnosis and treatment of this group of diseases are included, and this fact makes the book a very godsend to doctors who want to know how best to find out with the least search what is wrong with certain patients and what to do for them.

The author is sensible of the implications of a diagnosis of heart disease, as well as of the liability to error in undertaking such diagnosis. He lists certain symptoms and signs as pathognomonic. The chapter devoted to the study of a patient suspected of having heart disease is worth the price of the book to any doctor of general medicine.

Radiography and electrocardiography are evaluated as essential in some cases, useful in many, but by no means needful in all.

It is plain that the book is written, not to tell how many patients with heart disease the author has seen, or how many books and articles on the subject he has read, but for the purpose of helping doctors to do most for their patients who have, or think they have, heart disease.

THE DOCTOR TAKES A HOLIDAY: An Autobiographical Fragment, by MARY McKIBBIN-HARPEG, M. D. *The Torch Press*, Cedar Rapids, Iowa. 1941. \$2.50.

The holiday described was spent mostly in the Orient. The author's descriptions of and comments on living conditions, customs, politics, religions, superstitions as to cure of disease and other things, and her pen-pictures of persons and personages, keep the reader's interest and afford him entertainment and instruction.

METRAZOL NOT HELPFUL IN DEMENTIA PRAECOX

(G. Wilse Robinson, Jr., K. C., Mo., in *Jl. Kans. M. S.* May)

Published reports, statistical analysis and numerous observations show that metrazol convulsive shock is not helpful in the treatment of schizophrenia. Insulin shock is the treatment of choice in the management of schizophrenia.

Metrazol does have a valuable place in the handling of syndromes characterized by marked changes in the mood (affective disorders) and should be used when other more conservative measures have failed. Insulin shock, on the other hand, apparently is not especially beneficial in these cases.

BENZEDRINE SULPHATE has been used with success to overcome undesirable effects of morphine in cases of coronary occlusion.

LEUKEMIA may cause a striking increase in the basal metabolic rate.

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DR. BRICKELL: DR. WALKER

Dr. John Brickell was practicing medicine in Edenton, North Carolina, about 1731. In 1737 he traveled far into territory that is now part of Tennessee, and made his famous study of the natural, social, and economic conditions of North Carolina which is now so highly valued as an early history of that State. Indian customs were described, and trees, animals, plants for medical use were amply illustrated in his book.

A few years later, in 1750, Dr. Thomas Walker went in search of good lands in the western part of the colony of Virginia, that part which is now in the limits of Kentucky and Tennessee. He named the Cumberland Gap and River, and gathered a wealth of facts of interest to the historian, geologist, and naturalist. His exploration antedated Daniel Boone's by twenty years. But he missed the blue grass region of Kentucky on his journeys! A close friend of Thomas Jefferson's father, he later became the young man's guardian.

NOTES FROM NATURAL HISTORY OF NORTH CAROLINA, 1737, BY THOMAS BRICKELL, M.D.

To those who by Misfortune are incapable of work and have no way to support themselves, the Country allows *Fifty Pounds per Annum* for their Support.

Many women from other places who have been long married and without children, have removed to *Carolina*, and become joyful mothers.

It is enacted by the Laws of the Country that no person shall be liable to pay above forty Shillings for any public-House Scores for any Liquors, let the Persons that keep such Houses trust them what they please, yet by Law they can recover no more.

The Indians use Sweating very much, especially if violent Pains seize the Limbs. They likewise use bathing often in the Waters for the like disorders. With Oil of Acorns they cure Burns beyond credit; I have seen some of those wretches burnt in their Drunkenness so that in all Appearances they could not live; yet have I seen them cured and going abroad in ten or twelve days.

Last week elderly, erudite, and good-natured psychiatrist Russ spoke to his wife, younger than he: "Now, now, my dear, we must not live above our means. We must be honest with ourselves. A person like yourself, a woman of good will and honest intellect, is possessed of emotions that decorate human life instead of devastating it. Struggle, self-denial, and conflict are a part of human existence." She curled up her nose while he continued: "The very state of being alive is merely the equilibrium of opposing forces of anabolism and catabolism. So you see, everything in life is conflict." Today my wife told me that Mrs. Russ cut quite a figure in her new mink coat. I will have to use a different defense.

- Leaf from a doctor's diary, Roche Review.

The continuous postoperative fever following simple appendectomy was found due to the probation nurse forgetting to shake down the thermometer.

- Leaf from a doctor's diary, Roche Review.

I told lawyer Rollo when speed is doubled the destructive force increases four times; when tripled, nine times; when quadrupled, 16 times, then that within last year 36,000 deaths from one million injuries were due to automobiles alone. "I wish there were more of them," he remarked. "They bring me business." Today I got an urgent call from the hospital. There lay Rollo with a broken femur. The driver was of the hit-and-run variety. "Guys like those should be lynched," he said. "But you'll be making money out of this accident if they find the driver."

I tried to console him. "Money, money; that's all you think of," he shouted.

- Leaf from a doctor's diary, Roche Review.

I came across *The Flowers of Epigrammes*, and read this one by Parker Davis, written in 1577:

Three faces the Phisitian hath.

First angel he

When he is sought; next when he helps

A god he seems to be;

And best of all when he has made

The sick diseased well,

And asks his guerdon, then he seems

An oughty field of Hell.

- Leaf from a doctor's diary, Roche Review.

RAPID BREAST CHANGES FROM STILBOESTROL

(A. I. Weisman, New York City, in *Clin. Med.*, June)

A new chemical substance, not related structurally to estrone, but markedly estrogenic in action, is dihydroxy-diethyl stilbene, commonly known as stilboestrol.

Some patients have nausea or some gastric upset, but the side reactions are minimal and disappear with its continued use. In a case of primary ovarian hypofunction, with congenital aplasia of the uterus, 5-mg. tablet of stilboestrol, given daily by mouth, produced growth of the breasts and nipples to such an extent that the breasts simulated those of a pregnant woman. There was some slight nausea for the first day or two, which was scarcely noticed by the patient. Continued treatment with stilboestrol over a period of 5 months, with a total intake of 465 mg. of the substance, was attended with no toxic symptoms or physical findings.

DRUNKENNESS AS A CRIMINAL OFFENSE

(Jerome Hall, Prof. of Law, Indiana Univ. Law School, in *Quar. J. Studies on Alcohol*, Mar.)

To many observers of the endless stream of repeaters who make the round from court-to-jail an amazing number of times, it seems absurd to continue the existing punitive methods. Yet the present popular solution of letting down the punitive bars entirely is unsound. The premises upon which such recommendations rest are two: punitive methods have failed entirely; and, the psychiatrists can effect cures. Both of these assertions are overstatements. Granted that most chronic alcoholics suffer from nervous ailments, does it follow that punishment has no utility. Psychiatrists can remove the condition that is the root of repeated drunkenness in some cases; in a great many, assuredly not. The problem, as it presents itself to thoughtful persons, is always difficult. There is great room for improvement in the drunkenness laws, methods of treatment, and administration; many valuable reforms can be adopted that will not damage the existing political institutions or violate the underlying ethical ideals. The avenue to their discovery is collaboration of various scholars and experts who are fully aware of the complexity of the problem.

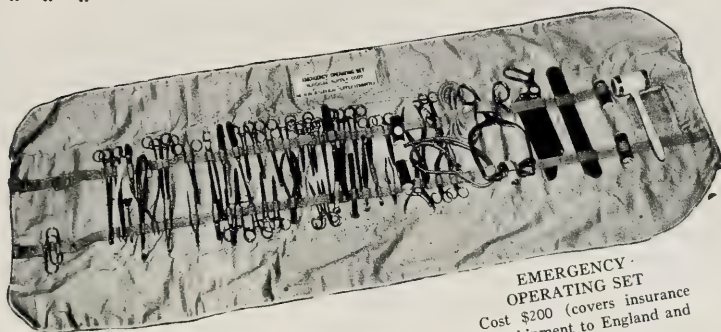
Most of these patients may be treated by a practical form of psychotherapy within the capacity of any physician. Sympathetic and patient investigation of the patient's mode of life and environment, with the object of bringing to light unsolved problems and relating these factors to the complaints will accomplish permanent cure in the majority of cases.

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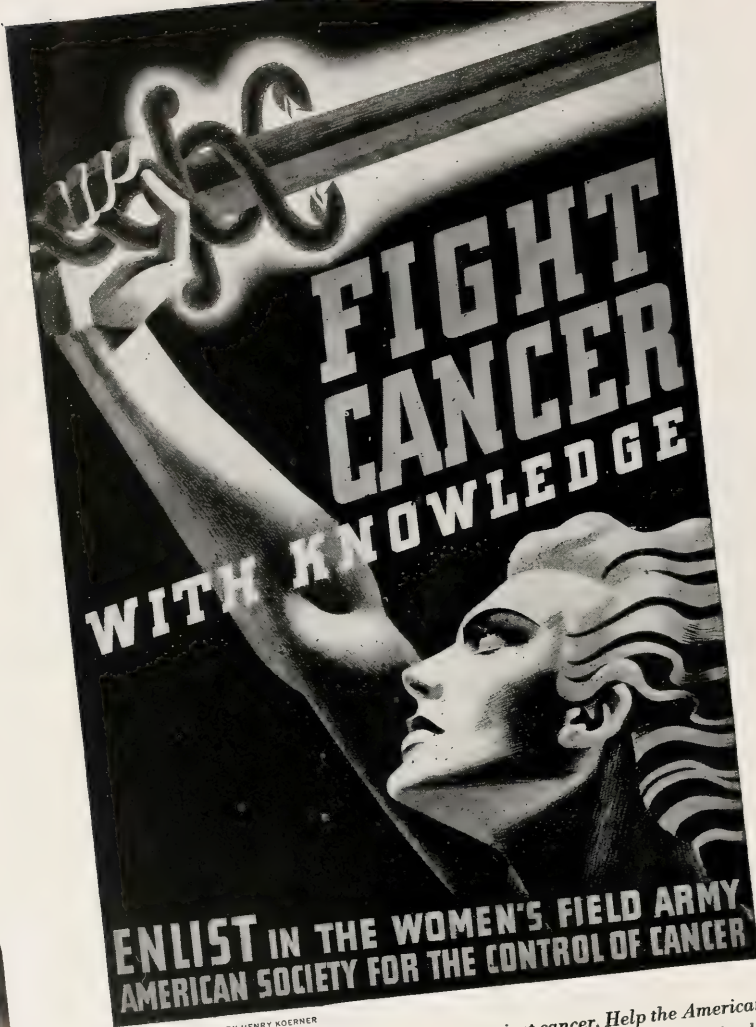
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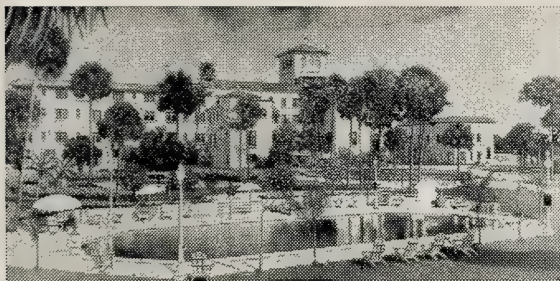
Early diagnosis is the first line of defense against cancer. Help the American Society for the Control of Cancer in its educational program. Enlist in the local unit of the Women's Field Army. Annual enlistment fee \$1.00. Use the American Society for the Control of Cancer labels on your packages.

If a resident of New York City or the Metropolitan area, address New York City Cancer Committee, 130 East 66th Street. Package labels and the Quarterly Review will be sent to you for your dollar.

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JAMES M. NORTHINGTON, M.D., Editor

Vol. CIII

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No. 7

Clinic On Rheumatic Fever*

CLYDE M. GILMORE, M.D., Greensboro

LADIES AND GENTLEMEN: I'd like to get your help in the management of a few cases of rheumatic fever, chiefly in those who have had rather severe cardiac damage. This will be very informal. I'd like to be interrupted at any time, and for all attending to move up close. Talk with me and with the patients and let us examine them together.

Case One

You know your first case of any disease is always the most impressive. It is rather singular that in the cases we know the least about and have the least to work with, we sometimes get our best results. This young man has been under observation for fourteen years. Fourteen years ago he had a tonsillitis that lasted longer than the average. He ran fever about three weeks. Then about the time he should have gotten up he developed acute sinusitis that lasted three months. Then a couple of months later, about the time he was getting on his feet, he got a severe bronchitis or bronchial pneumonia that kept him in another month. I give you the series because at the time we regarded them as a series of unrelated links in a chain of circumstances. Now we know that all those things were different manifestations of rheumatic fever. Most rheumatic fever patients have at some time some throat manifestations. Joint manifestations may be temporary. They may not be impressive, yet months later we may come upon marked lesions. Much to his disgust, we kept this boy in bed two years. His recovery we attribute to a good constitution, to careful nursing by his mother, to codliver oil and to rest in bed. He lost the first year or two of school. That, now, has been fourteen years. He was examined once a year, appar-

ently he has no residual damage. His heart is a good one. Sometimes I can hear a slight mitral murmur; most of the time I can't. Apparently the examiners could not hear it when they inducted him into the army from State College. Neither his mother nor I relaxed our vigilance for fourteen years. The only precaution we have used during the last ten years is to strictly keep him in bed during acute colds. If any of you gentlemen want to listen, go ahead while we go to the next patient.

Dr. Redwine, Dr. Starr and others listen.

Case Two

I want to acknowledge my indebtedness to Wade and to his family for teaching me something about living under difficulties. Before I go into the medical aspects of this case I want to tell you how he passed three years as an invalid with profit to himself and his community, and considerable advantage to his career since that time. This was an acute fulminating type of rheumatic fever, with sore throat as usual, then a tonsillitis and sinusitis that lasted a year and baffled all treatment. He had joint symptoms and a heart involvement suggestive of pericardial lesion which was more severe than the rest. For approximately three years he was in bed. When things looked the darkest, when his temperature was averaging 102 every day for weeks on end, when his white count was running 18,000 to 25,000, when his mind was showing symptoms of cerebral limitation, his father fixed up by his hospital bed a *bird-feeding station* and got him a book on birds. For one year Wade did not sit up in bed and during that time he studied birds. At the end of that time he was an authority on the birds of this region and entertained boy scouts and clubs. He is in demand as a bird expert

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

in this section. For two years he was confined to a wheel-chair and could sit in the back yard in the sunshine where he could watch the insects. Somebody got for him a book on the insects of this region. The two years he spent on a pallet were not wasted. Since he has been at the University he assists in the Department of Entomology. At any rate all the thousands of bugs captured within forty square feet in the back yard in time that ordinarily patients waste in fretting and grumbling have served him to good advantage and assisted him in his work since he has been in college. He spent some time at Wesley Long Hospital when the going was very rough.

He developed after the first six months a severe mitral lesion and pericarditis. He had a pulmonary lesion of rheumatic origin. Then he had a recurrence of joint lesions. When his resistance was whipped out, and after he had settled down to the sameness of day after day after day, his temperature ran 99 to 100. He had no resistance. He had transfusions and infusions and liver extract and in desperation we gave him typhoid vaccine. After each injection he had a reaction. We were feeling our way very carefully—we gave him half a dose of typhoid vaccine intravenously. Since that time he hasn't had an acute recurrence of sinus infection, has had no more joint symptoms and at the present he has some enlargement and permanent damage but he is able to go ahead with his class at the University. He just has to take things as they are at the present time. He has learned to live with a crippled heart and may out-live some of the rest of us.

Patient takes cardiograms with him to back of room and Dr. Cardwell and others study the case.

Case Three

Mr. H. is our third case and shown to illustrate the point that in these diseases, no matter how bad the going or how dark the outlook, one must not give up. Now Mr. H. had a stormy time. He was first sick at the age of ten. He was in bed six months. From then on he was in bed on and off and in and out for years. He would have a spell and would be in bed awhile and then be up and in school a few months and back again. In this time he was treated by a number of good doctors, but attacks recurred until it was discovered that he had an irreparably damaged heart. He had rather severe joint symptoms—swelling and pain, heat and tenderness first in one joint and then another until after a period of five years his back, hips, knees and ankles were involved. From the age of ten to the age of fifteen he had to sleep on several pillows and sleep propped up. He had frequent recurrences of joint attacks. Now, I said we wanted him to illustrate the fact that it doesn't ever pay to give up in these cases.

Let's have his pictures. The patient and his doctor at home and I have all, at the time five years ago and in the last illness that he had, given up. Dr. Frank Sharpe, of Greensboro, at the Wesley Long Hospital, came in after a battle of several weeks. The patient was gasping for breath after an attack of pulmonary edema. Dr. Sharpe gave us a pep talk. We took courage and started all over again.

We gave a mercurial diuretic. We digitalized him. We stepped up about double the theoretical dose for digitalization. We filled him full of Vitamin B and liver extract, and that has been nearly six years ago. Since that time with the damaged mitral valve, the damaged aortic valve and chronic auricular fibrillation for six years he has been very comfortable. He rests two hours after lunch and goes to bed when he has a cold, he is a successful merchant and is getting things together to take care of his old age, he is raising a family. We are proud that he had the courage not to give up when we did.

DR. ROBERT WILSON, Charleston: When were the films taken?

DR. GILMORE: A week ago. Dr. Wilson, would you mind listening to him and give me an idea about the future management of this case.

Dr. Wilson examines patient.

MEMBER: Dr. Gilmore, may I ask a question? Just now you mentioned giving typhoid as a last resort. Did it give results?

DR. GILMORE: We got some results in this case. I think it should be a last resort. We very often give it intramuscularly. When a patient gets to dragging along and not free from fever, when you want to stimulate resistance as a last resort, it can be given intravenously. I think it is a dangerous procedure. It worked in this case and brought us out of a bad hole.

Case Four

Martha and John illustrate one of those tragic things we sometimes see of rheumatic fever. We have had three families recently in whom this disease went like wild fire through the whole family. Martha had the first attack in November, 1936, with pain and swelling in the knees and both ankles. It jumped to the middle finger of the left hand and lasted 12 weeks after the onset at which time she had acute and violent cardiac symptoms. She was in bed, of course, during this time. At the end of twelve weeks she had pericardial effusion and sudden and intense decompensation. She was digitalized. She had the usual treatment. She had bed rest for a year and about the time that we were ready to give up she finally began to show some improvement. The pulmonary edema and pericardial effusion disappeared. We gave typhoid

intramuscularly when the fever was at the low, chronic stage. Finally, after a two-year period in bed, she began to show improvement and has come back to make a spectacular clinical recovery. However, there is the question as to whether to attempt to go to college, or whether to try to finish school, and how much activity should be restricted for the future. She has a mitral lesion with some permanent damage.

The doctor and I got hold of John a little earlier than Martha. John was put to bed and didn't get up until the fever was normal for three weeks, six months later. John got much less cardiac damage. I think, too, that it helped because we removed John's focal infection from tonsils two weeks after the onset of the disease, rather than after 15 weeks, as we did for Martha. What part focal infection has in the induction of the disease, I don't know. Present active focal infection does greatly affect the condition. I think that in both his case and Martha's, which have come along since sulfanilamides, the sulfanilamides helped keep down complications and hastened their recovery.

Patients examined by Dr. Ruben and Dr. Vaughn.

Case Five

The question with Jesse Ray is after five years of fighting, how much activity should be allowed. Dr. Wilkinson, help us answer that question. His case is another illustration of the fact that it doesn't pay to give up. Several times in the hospital he was cyanotic, edematous and delirious and it looked like he had very little chance. He has had to be digitalized since his acute illness. He spent one year in bed and we have been very leary about letting him increase activity since that time. He has a damaged aortic valve and has the typical auricular fibrillation, which if very severe requires digitalization for the rest of the patient's life. He has pulmonary edema.

Case Six

This case is shown to illustrate the use of a new drug, a drug not yet on the market, but if any of you want to make a trial, if you have a case of ascites or edema, there is developed now a tablet of salyrgan theocin that is given by mouth. Six cases with us had it and it acted as well or better than an intravenous mercurial diuretic.

This young lady came here twelve months ago and was in the last stages of ascites and edema, pulmonary edema with the liver below the navel, dependent edema and it looked like the end of the row. She has lived for a year by occasional doses of salyrgan by mouth. The first time the output was increased from 300 c.c. to 900 c.c. Her edema disappeared. She has occasionally to take short courses and is now on them because her liver

edema reappeared. Her life will be prolonged some time because of the use of this oral preparation; on account of the distance they live from places where she can obtain adequate medical treatment it would make it prohibitive to go to her home. You can repeat the salyrgan often enough to give satisfactory results. I have some samples of the preparation to be given by mouth which I will pass around. It is still in the investigational stage. I think from results in six cases that it will turn out to be a satisfactory therapeutic weapon.

That is all that I have, gentlemen. I hope some of the doctors who examined patients will add something to them. We have only a few more minutes. Thank you very much.

DR. CARDWELL: One question. The patient you described with the auricular fibrillation—would he be permanently digitalized or have occasional digitalis on increased pulse rate and congestive failure?

DR. GILMORE: No, sir, we don't dare let them get out from under the digitalis, a grain and a half a day. We have had some experience leaving it off and we had edema, dyspnea and decompensation.

DR. ROBERT WILSON: I want to congratulate the doctor on his wisdom in handling these cases. He gave a splendid demonstration of what can be done in heart cases. The danger which Dr. Gilmore has avoided is this—frequently we convert physical invalidism into mental invalidism. He has restored his cases to productive life again. I think it is splendid.

Perhaps I might mention one case some years ago, one of a family of several children all of whom had rheumatic involvement. One developed, unfortunately, a very bad infection with the usual result. The other two recovered. One was a very striking case of a boy in school. They held him back as much as his mother was able to do. He had one or two periods of broken compensation with considerable edema. In spite of the mother and her instructions and the teacher's efforts, whenever nobody was looking he would play ball. Subsequently he went to college and played football. Now it is difficult for any one to find the lesion unless he is very expert in his methods or has dealt with lesions in similar cases. It is very striking how heart disease does sometimes get well. As Dr. Gilmore says, we should never give up, never despair of bringing them back again to healthy life.

DR. R. B. DAVIS: Dr. Wilson's remarks bring to the front the importance of the art of medicine as well as of the science of medicine. Dr. Gilmore is past master in both, but particularly in the art of medicine, and I wish we had more of him. We'd live longer and be happier.

Clinic On Certain Nervous and Mental Conditions *

WESLEY TAYLOR, M.D. and J. FRED MERRITT, M.D., Greensboro

WE WILL CONSIDER the case of a school girl, age 12 years, whom for reasons not necessary to enumerate, I have had very slight opportunity to more than glance at.

She has always been well. There is nothing in the entire history of importance excepting an automobile accident in 1937. She was not hurt. An immediate examination was made by a competent surgeon who pronounced her sound. There have been no sequelae.

On the night of Nov. 17th last she had a series of convulsions lasting from 8 o'clock until the next morning. These convulsions were characterized by headache, nausea, vomiting, tingling sensations and twitching of the entire left side—face, arm and leg. The next morning she had no memory of the occurrences of the preceding night. Marked tachycardia persisted from the evening before. There was a very slight amount of fever— $99\frac{1}{2}^{\circ}$. The twitching in the face, hand and arm recurred at intervals, and her mental condition varied in the same manner. There was very definite paralysis of the entire left side and her grip was poor. The tongue was protruded to the left. There were no sensory changes to be found at any time, but this examination was difficult. Pupils were unequal and Babinski reflex was present on the left; knee-jerks were normal. Reflexes of left hand and arm somewhat increased. She could not get her hand to her face. Nausea and vomiting recurred occasionally. Speech was indistinct and headache, which persisted, was most annoying.

She was told to remain in bed, take liquids only, and tablets of empirin compound were given for the headache.

The second morning she was considerably better and her mind perfectly clear, most of the time.

When I went to call two days later she had gone to school—"perfectly well." She continued to attend school but I managed to see her on Dec. 14th. At this time there was some numbness of the entire left side, and the tongue still extended to the left. She complained of noises in left ear and blurred vision. I sent her to an oculist but he found normal vision and no signs of choked disk. Pupils were normal.

I prescribed sodium iodide, five grains after meals, and increased the dose a half grain each day.

I got track of her again on Jan. 8th. On this occasion the left side of her face was less mobile

and the hand and leg showed some impairment of motion. She could not unbutton or button her clothing with the left hand. These conditions have gradually increased in severity since that time but with marked fluctuations. Sometimes she felt "perfectly well." The stools and urine were entirely normal, and repeated blood examinations likewise. A spinal puncture has never been attempted.

She was told to remain quiet on a couch at home and iodide was continued.

From this time on she consulted a number of different physicians and visited several clinics where varying opinions were expressed, none of which appears to have been satisfying.

Not having been in touch with the patient for considerable periods I cannot give a very accurate description of the progress of the case. In general, however, this girl was up and around and subjected to a great deal of excitement and activity.

The paralysis of the face increased somewhat, though it has never been striking. There is at least some atrophy of disuse evident on the entire left side. The tongue still extends to the left somewhat. There is no vertigo, no tachycardia and no nausea, but headache troubles occasionally.

She is getting increasing doses of iodide though she has not taken a very high dosage as yet. On Feb. 12th the x-ray examination was negative as to tumor of any kind but there is very definite evidence of increased pressure in the entire cranial cavity.

On examining this patient today I find a regular pulse of 72 per minute. Her mental condition is clear, her memory good. There are no delusions or hallucinations. She identifies objects normally and there are no speech disturbances. (Patient pronounces Hippopotamus and repeats "seven, slim, slick, slender saplings.") She is alert—there is no drowsiness and she stands steady and erect on her feet, so there seems to be no cerebellar trouble. Headache does not seem to be produced by bending forward or by coughing. I notice that my patient tires mentally much more readily than is usual—in fact she shows it very clearly right now. Percussion of the head shows some tenderness, but this is not localized nor is it a constant finding. The pupils are normal today as is the hearing. There have been no signs whatever of ocular paralyses of any kind. The Babinski sign is present and all of the reflexes on the left side are increased as compared with those on the

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

right. This includes the abdominal as well as the epigastric reflexes. Today her tongue is extended so straight out that it is not of diagnostic value, but in general she is not doing well clinically.

Dr. Mills made a complete examination of her eyes today. The vision is materially impaired in both eyes and there is very marked double choked disk. There are also signs of greatly increased intracranial pressure. I neglected to say that paroxysms of yawning have been common and on one occasion she had hiccoughs for a couple of hours and on other occasions for short periods.

In considering the diagnosis of our case I call any expanding lesion in the skull a tumor. Tumors are not uncommon in neurology. Dr. Cushing said that, in the Surgical Service of the Boston City Hospital, out of 2,500 routine surgical cases admitted 200 were cerebral neoplasms. The most common are gliomas or neurogliomas.

In the case before us we have a hemiplegic condition involving the entire left side—face, arm and leg. The only possible location where one lesion could produce such a combination of symptoms would be in the pons, at a point below the nucleus of the facial nerve and above the decussation of the pyramids. If now a lesion in this location could produce the other essential symptoms which we find, we should feel pretty sure that our location is the correct one. At this point and on the same general plane are located the nuclei of four cranial nerves; namely, the 7th, 8th, 9th and 12th. The facial, as we see, is strongly involved and affection of the auditory nerve may be seen in the tinnitus which bothers at times. As far as the 9th or glossopharyngeal nerve is concerned, motor disturbances in the realm of this nerve are usually slight and as a rule exceedingly difficult to recognize, even in cases of its complete paralysis, so one can scarcely say that this nerve is or is not affected. The hypoglossal involvement is manifested in the deviation of the tongue, all of which strongly confirms the correctness of locating the lesion in this region.

As to the nature of the lesion I will not express a positive opinion. In question come gliomas, solitary tubercles, abscesses and a number of less likely processes. If I had to make a guess I should take a chance on a glioma.

Treatment is likely to be discouraging. If iodides fail then there is little hope and one will have to depend on symptomatic medication.

The prognosis is generally poor—very poor. It is poor because the family do not cooperate at all; poor because they cannot afford proper care and attention even if every attention would avail anything, which is exceedingly doubtful.

It is not necessary to tell you that the lesion itself is entirely out of any surgical reach, even if one could be found who would be willing to at-

tempt it. Spinal puncture is too dangerous to recommend and I do not see that pumping air into the ventricles would accomplish anything in this case.

—Guilford Building

WET AGENTS

(W. W. Duemling, Fort Wayne, in *Arch. Derm. & Syphil.*, Feb.)

The most powerful wetting agents yet described are the esters of sodium sulfosuccinates. One of these is available under the trade name Aerosol OT Dry.

The special properties of these substances make them useful locally in many skin diseases. Following is the formula for a semifluid lotion, with excellent softening properties, which will not produce an oily effect:

Cetyl alcohol	2 parts
Stearic acid	2
Liquid petrolatum	10
Aerosol OT, 10% aqueous	10
Water	76

The alcohol, petrolatum and stearic acid are heated until clear, and the aerosol solution added, with stirring, while the solution is warming. Water, brought to the temperature of the first component, is added with agitation. To avoid foaming, agitation is stopped when emulsification occurs.

Vanishing, cleansing and liquefying creams can be made by using Aerosol OT Dry in conjunction with the proper substance to produce practically any type of product desired. Following is a typical formula:

White wax	11 parts
Paraffin	10
Liquid petrolatum	40
Water	29
Aerosol OT, 10% aqueous	10

The wax and paraffin are melted in the petrolatum by heating the mixture to 65-70 C. The aerosol solution and water, heated to the same temperature, are added slowly with stirring.

An excellent shampoo may be prepared according to the following formula:

Aerosol OT Dry, 100%	16.00 parts
Cetyl alcohol	5.00
Liquid petrolatum	5.00
Lecithin	0.75
Alcohol, ethyl 15%	20.00
Distilled water	53.25

The aerosol, lecithin, cetyl and ethyl alcohols are mixed and allowed to stand 12 hours. This component is warmed over a steam bath until melted, then stirred until clear. Petrolatum is added slowly with stirring and the distilled water is added gradually. Product should be entirely clear and fluid. The ethyl alcohol prevents turbidity. Cetyl alcohol and petrolatum prevents a drying effect on hair and scalp.

For dry hair and scalp, a dense, stable and copious lather can be produced from a shampoo made by dissolving 10 parts of Aerosol OT Dry, 100%, in 90 parts of olive oil heated to 70 C.

For excessively oily hair and scalp the following formula is recommended:

Aerosol OT Dry, 100%	10 parts
Alcohol, ethyl 15%	20
Distilled water	70

Dissolve the aerosol in alcohol by warming, and add water, or allow aerosol to soak in alcohol 12 hours and add water the next morning.

A Syndrome Responding to Parenteral Anterior Pituitary Extract

J. ALFRED WILSON, M.D., Meriden, Connecticut

DURING the past few years it has been found that in certain cases presenting some of the symptoms of hypothyroidism the response to thyroid therapy was not as satisfactory as could be desired. A group of patients has been recognized that showed improvement when given parenterally an aqueous-acetic acid extract of fresh anterior lobe of the pituitary. The improvement was not permanent, but lasted from one to eight weeks. The injection of the anterior pituitary extract then had to be repeated. In this paper a description is given of the symptoms and signs found in this syndrome.

Most of these patients are women from the third to the seventh decade of life; the youngest was 19 years and the oldest 78 years of age. Of the forty-four such patients treated in the last six years, thirty-six have been greatly benefited, and eight received no benefit from prolonged treatment.

SYMPTOMS

The symptoms complained of were:

(1) Heaviness, tightness, stiffness of the occipital region of the head and down the back of the neck.

(2) Fullness and heaviness about the eyes. The eyelids are heavy and stiff. The eyes feel like they are looking through slits. There may be difficulty in focusing the eyes.

(3) A generalized feeling of bloating over the body, with puffiness over the outer malleoli, but not a pitting edema.

(4) A moderate interference of the finer functions of the fingers, such as writing. The fingers and hands feel clumsy.

(5) Soreness and swelling of the smaller joints, such as the fingers and toes. These joint symptoms do not occur in all of the patients.

(6) Moderate degrees of exhaustion, tired feelings and lack of ambition.

(7) Somnolence during the day, deep sleep at night. No mental depression, nervousness or insomnia.

(8) Loss of libido.

(9) A small proportion of the patients complain of twitching and spasms of the thigh and calf muscles. These spasms usually occur when at rest, not when exercising.

SIGNS

(1) Normal or moderately low basal metabolic rate.

- (2) Slow pulse and low blood pressure.
- (3) Normal blood count in the majority of the cases.
- (4) Increased blood cholesterol.
- (5) Normal or low blood sugar.
- (6) Normal blood urea and calcium.
- (7) Body weight and height normal or average in the majority. Some of the cases were moderately, but none greatly, overweight.

TREATMENT

The contents of a 1-c.c. ampoule of aqueous-acetic acid extract derived from 17 grains of fresh anterior lobe of the pituitary gland is given hypodermically or intramuscularly into the outer arm below the shoulder or in the lower aspect of the thigh. The injection relieves the symptoms in about 24 hours. The relief lasts from a few days to eight weeks. An effort is made, in each case, to find for how long the symptoms are relieved, and treatment is planned so as to be given just before the symptoms might be expected to return. There is very little likelihood of a cure. This is rather a substitution or supplementary treatment.

The injections are only moderately painful, and in only two cases did localized reactions of any severity occur. In the one case exhibiting urticaria for a day, desensitization by starting with small injections and increasing the dose rapidly to the usual amount was entirely successful.

The continued injection of anterior pituitary extract over a period of years obtained the same improvement of symptoms. There was no evidence of the formation of an antihormone as reported by Collip^{1,2}. One explanation of this occurrence may be the time elapsing between the injections. Our intervals have been one to eight weeks. In the tests cited, to develop antihormones in laboratory animals the injections of the hormone material were given twice a day and in much greater amount in relation to body weight than we have used in our patients.

Apparently there is a difference in the extracts of anterior pituitary of various manufacturers. Saline extract of anterior pituitary made from powdered extract does not, in our experience, give relief from this syndrome. We have used extracts derived from this source, according to the description of the product, with no amelioration of the complaints of the patients. All the relief of signs

and symptoms have been obtained from extract of fresh anterior pituitary.

Abstracts of Cases

Case 1.—A single woman 43 years of age, examined May 17th, 1934, height 65½", weight 173 lbs.—gain of 20 lbs. in past two years. Complaints were drowsiness for 3 months, and indigestion relieved by dilute hydrochloric acid, headache every morning. Periods were regular and painless, and for last few months had been growing less in amount. Basal metabolic rate was —22, blood sugar 106 mgm., blood urea 12 mgm., calcium 9.5 mgm., phosphorus 3 mgm., hemoglobin 88.6%, leucocytes 7,000, erythrocytes 4,640,000, smear negative. Wassermann negative. Blood pressure 120/70, pulse 72. She took two grains of desiccated thyroid every other day and felt better until March, 1935. She complained of awakening in the morning with a headache and a grinding heaviness of the back of the neck. The thyroid was continued and she was given 1 c.c. of antuitrin hypodermically on the 4th, 13th and 18th of March, 1935. Soon she felt much better. She has continued to take antuitrin, 1 c.c., by hypo every 10 days. She complains of return of the grinding heaviness of the neck and the coated tongue when she needs an injection, that her eyes feel heavy, that she has trouble in focusing them and they feel like they are looking through slits. These symptoms subside in 24 hours and she is comfortable for about 10 days to two weeks. The patient is a nurse and continues the treatment herself. Her last few basal metabolic rates have been around —7. She has passed through the menopause during the last year with very little trouble.

Case 2.—Married white woman, no pregnancies, 43 years of age, examined July 13th, 1934, weight 139½ lbs., height 68½". Complained of severe aches in the top of the head and down the back of the neck, sleepiness, indigestion and chilly feelings. Periods regular and apparently normal. Blood pressure 114/66, pulse 75. Blood count normal, blood sugar 91 mgm., calcium 10 mgm., phosphorus 3.8 mgm., cholesterol 307 mgm. She was given thyroid, gr. 2, daily and 1 c.c. antuitrin by hypo. After a time she became very comfortable. The antuitrin has been given every 4 to 6 weeks up to the present time. In 1939 her periods became irregular and stopped. She had hot flushes for some months, but not severe enough to necessitate estrogenic hormone therapy.

Case 3.—A married white woman aged 19, seen in May, 1926, complained of nervousness, indigestion, pains in the abdomen of indefinite character, gain of 20 pounds in weight last year, delayed and slight menstrual flow. Dr. Max Mailhouse of New Haven made a diagnosis of dystrophia adiposogenitalis. She was given injections of antuitrin during 1926 and 1927 with considerable benefit. Her periods increased in amount and became regular. In 1932 there was fullness and aching in the back of the head which antuitrin improved. In 1934 she was delivered at term of a normal boy. In the latter part of the pregnancy the ankles and hands were edematous, blood pressure 136/80, slight albuminuria. Since 1934 she has been treated regularly with injections of antuitrin. She is comfortable and feels fine for about six weeks; then the bloating feeling in the hands and feet returns, and along with it stiffness and aching in the back of the neck.

Case 4.—An unmarried white woman, aged 34, weight 135 lbs., height 66½", seen December 11th, 1937, complained of feeling tired, eyes burning and seeming to jump around, being unable to work since June. In this time she went to several doctors, was treated in an army hospital for adrenal insufficiency, and by a chiropractor. Twelve years before, she was treated for hyperthyroidism. Basal metabolic rate —20, blood pressure 130/80, hemo-

globin 14.73 mgm., erythrocytes 4,950,000, leucocytes 7,000—baso. 1.5%, eos. 3%, myelo. 0, juv. neutro. 0, stab neutro. 5.5%, seg. neutro. 53.5%, small lymph. 18.5%, large lymph. 11%, mono. 6.5%. Weekly injections of antuitrin were given hypodermically. The eye symptoms and the aches in the head and down the back of the neck were relieved and she returned to work January 7th, 1938. She has continued steadily at work up to the present time. When she begins to feel a return of the eye and neck symptoms in three or four weeks, they are promptly relieved by 1 c.c. of antuitrin.

DISCUSSION

These cases have been classed as mild insufficiency of the secretions of the anterior lobe of the pituitary because improvement follows promptly and consistently on the empirical use of aqueous-acetic acid extract of the fresh gland. This seems reasonable because it has been demonstrated by Simmonds³ that severe insufficiency of the anterior lobe occurs—the Simmonds syndrome—based on complete destruction of the gland. Recently, Sutton and Ashworth⁴ in two papers reported several cases in which recovery from pellagra-like conditions had been effected by treatment with polyan-syn and vitamin B complex. These cases had previously failed to respond to nicotinic acid, riboflavin, liver parenterally and adequate diet. If there are definite syndromes recognized as occurring with the destruction of a large portion of the anterior lobe of the pituitary, it is reasonable to believe that mild cases of insufficiency can be found and that they would be relieved by extract of anterior pituitary parenterally administered.

This syndrome may be presented by women who are menstruating regularly, those passing through menopause, or those several years past the climacteric. We think we can differentiate the syndrome from the symptoms of menopause if the two occur at the same time. We found that extract of fresh anterior pituitary does not relieve the hot flushes, nervousness, insomnia and mental depression of the menopause. To patients who complained of these symptoms we gave adequate estrogenic hormones and obtained relief of the menopausal symptoms. The anterior pituitary insufficiency was then treated by injection of anterior pituitary extract.

In a few cases we examined the vaginal smears. Those that suffered from menopausal symptoms showed the small atrophic cells as described.⁵ In the cases presenting no menopausal symptoms normal smears were found.

A lowering of the blood cholesterol toward or to the normal level was found to occur along with an improvement of the symptoms. This fluctuated, but the average blood cholesterol level was lower while treatment was continued.

The relief of soreness and swelling of the joints of the fingers and toes was interesting. In some of the cases there was what appeared to be begin-

ning arthritis. The joints of the fingers and toes were swollen, tender and painful. Under treatment the pain and soreness wellnigh disappeared and the swelling of the joints receded slightly. No improvement was found in very marked deformity of the chronic arthritic except a slight lessening of the pain or soreness.

SUMMARY

A considerable percentage of middle-aged women, suffering from stiffness of the back of the neck, heaviness of the eyelids, generalized bloating over the body, stiffness and soreness of fingers and toes, somnolence and loss of libido; and with low blood pressure, moderately low basal metabolic rate and increased blood cholesterol can be relieved by injections of aqueous-acetic acid extract derived from the anterior lobes of the pituitary gland, parenterally administered at intervals of one to eight weeks.

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THE CHOICE OF ANESTHESIA IN LUDWIG'S ANGINA

(P. S. Marcus, Boston, in *Anes. & Analg.*, May-June)

Pentothal is preferred and by this technique: Atropine, gr. 1/75, half hour before operation. Metrazol and additional atropine should be on hand in separate sterile syringes. An incision preparatory to tracheotomy should be made under local anesthesia. A 5 per cent solution pentothal should be injected slowly, 0.5 c.c. at a time, a pause of 15 seconds. When the patient can no longer count aloud or respond to questions, respiration and reaction to painful stimulation, such as pinching of the skin with forceps, are the guides to further dosage. A nasal tube should be gently inserted into the larger nostril to just above the vocal cords (7 inches average); the tube is then connected to an oxygen apparatus which will deliver a continuous flow of 3 liters per minute. Any relaxation of the jaw interfering with patency should be supported by an assistant, if tongue interferes it is grasped and held forward with a pair of forceps. For cyanosis oxygen flow is increased, and metrazol, 3 c.c., injected intravenously, repeated if no improvement. If coughing or gagging interfere atropine gr. 1/150 intravenously. Reflexes arising from the site of operation must be abolished throughout by fractional administration of further pentothal to maintain constantly a sufficient depth of anesthesia. In the event that tracheotomy becomes necessary anesthesia can be maintained with pentothal while the surgeon completes the tracheotomy and the main operative procedure. Administer oxygen nasally for 12 to 24 hours, or until the patient breathes easily and is of good color. After the operation is completed and until the patient is well beyond danger of obstruction, someone capable of completing the tracheotomy, either the surgeon or the anesthetist, should be immediately available and a tracheotomy kit should be in readiness at the bedside.

CURRENT PROBLEMS OF AMERICAN MEDICINE

(F. H. Lahey, Boston, in *Jl. A. M. A.*, June 7th)

My own opinion, and I believe that it is my duty to express it, is that we are already committed to a position, whether we like it or not. I myself like it. We have dared the dictator. It is too late to appease him; the word has no meaning in his language. We should arrive at a conviction concerning isolation. Is it right? It is my conviction that it is not. I prefer destruction if it need be to survival in cowering terror. Give me positive commitment rather than compromising, unsatisfying safety. If I must face my friends in democracy trying to explain my reasons for seeking dubious safety and leaving them to their fate, I prefer the uncertainties of the hazardous undertaking frankly faced and hazardous, and to accept them. It is my opinion that if disaster should overtake us in the hazardous undertaking it would be no more terrible than what will happen to us if we are to try to isolate ourselves. We shall still have ourselves to live with. This nation has been gallant in the past and it can be gallant again. I do not believe that there is a safe course. In dangerous times such as these I would like to make as a closing statement that it is my conviction that a dangerous course has real advantages.

EGG-YOLK POWDER FOR PUTTING ON WEIGHT

(A. Steiner New York, in *Jl. A. M. A.*, June 21st)

The feeding of egg-yolk powder caused 9 of 10 patients to gain weight, whereas previous high-calory diets supplemented by vitamins had failed.

It is believed that some factor other than the caloric value of the egg-yolk powder may play a part in the resultant increase in the nutrition of the body inasmuch as the calory intake of 5 of the patients was below and that of the other 5 but slightly above that of a control period, when they failed to gain weight on an ample diet that did not contain the egg-yolk powder.

Egg-yolk powder is said to be a rich source of vitamins A and D and the water soluble fraction of the vitamin B complex. The cost of the egg-yolk powder was 15.4 cents daily (\$1.08 a week) for each patient.

THE USE OF POWDERED SULFANILAMIDE IN THE PERITONEUM

(C. A. Kinney, Florence, in *Jl. S. C. Med. Assn.*, June)

The drug used in these cases was the finely granular powder of sulfanilamide in quantities of five and 10 grams in test tubes stoppered with cotton, sterilized in a dry oven at 120° C. for 30 minutes.

In the cases of generalized peritonitis encountered, we used 10 grams of the drug for the average adult of 150 lbs. In one child, four years of age, with ruptured appendicitis, we used ¼ of the adult dose with complete recovery.

Peritonitis was due to ruptured appendix in 18 cases; intestinal perforations (gunshot wound), 2; intestinal perforation foreign body (fish bone), 1; ruptured diverticulum, 1; gangrene of small intestine with resection, 4; tubo-ovarian abscess with free pus, 19.

In a series of 45 cases of generalized peritonitis treated at The McLeod Infirmary, sulfanilamide powder was used in all the cases with only one death resulting, and this due to a cerebral embolism shortly after operation. Some of these cases appeared hopeless. Complications were encountered less frequently than in former years and no severe toxic effects were noted.

The use of sulfanilamide in the peritoneal cavity is wholeheartedly endorsed in all cases of frank or suspected generalized peritonitis.

The Diagnosis of Submucosal Myomas and Polyps of the Uterus*

W. B. NORMENT, M.D., and E. D. APPLE, M.D., Greensboro

THE DIAGNOSIS of submucosal myomas of the uterus is often very difficult. Bimanual examination of the uterus will often reveal that the organ has a smooth contour, possibly that it is slightly enlarged. Because of its smooth contour and our inability to palpate a fibroid, it is assumed that no fibroid is present, and the patient is given some type of therapy with no relief. In those patients approaching menopause, castrating doses of radium or x-rays are often given with the result that the continued bleeding persists following the treatment. This is particularly true in those patients who have a fairly large submucosal myoma or a fairly large polyp protruding into the uterine canal. It is unfortunate that sometimes a fibroid from the serosal surface is removed, and the patient continues to bleed because of a persisting submucosal fibroid which was overlooked at the time of operation. It is probably safe to say that a fibroid which is distant from the endometrium probably has no causal relationship to bleeding from the uterus. There has been no method published whereby we could detect these submucosal myomas or large polyps, except by curetment, and this is often not satisfactory.

We wish to present a method whereby these submucosal myomas or uterine polyps may be detected if they protrude into the uterine canal. One year ago, we began using a small bag or balloon inside the uterine cavity into which was instilled air as a contrast medium for the detection of these tumors (Figure 1). A myoma large enough to protrude into the uterine cavity would depress the bag and leave a defect in the air shadow upon x-ray examination. The bag used at that time was a prophylactic rubber bag attached by a silk thread to the end of a number-18 rubber catheter. This was inserted into the uterine cavity following dilatation of the cervix under gas anesthesia. We had some difficulty at that time, due to the fact that into the small uterine canal it was impossible to instill a sufficient quantity of air into the balloon or bag to show plainly on the x-ray film. Also, the shadows of gas in the intestinal tract would oftentimes fuse with the shadow of air in the balloon, and it would be impossible to detect the difference between the air in the bag and that in the intestinal tract. To remedy this condition, we had constructed a bag with an opaque material impregnated into its lining in

order to give a distinct opaque outline which could be differentiated from gas in the intestinal tract (Figure 9). We used this bag with fair success, but finally discarded it because of the fact that the opaque material made the bag less pliable, and less conformable to the irregularities in the uterine wall.

Since the air medium and lining of the bag with opaque material were unsuccessful, it was thought best to instill into the bag a thin opaque material in combination with air. A weak solution of sodium iodide was used at first followed by an injection of air. This failed to outline the bag properly, as when the air was injected behind the dye it would give a diffuse and ragged appearance to the dye and was not clear cut enough to make distinction of the uterine canal. Following this, diodrast, or 12.5 per cent sodium iodide, was injected into the bag and x-ray films made of this media. Both the diodrast and the sodium iodide solution were found to form a medium which was too heavy, overlying the possible myoma protruding from the anterior and posterior wall and thus preventing a displacement of the dye as is seen with stones in the gallbladder (Figures 4 & 5). A 3 per cent solution of sodium iodide was then used and it was found that with this strength a polyp or myoma protruding from the anterior or posterior wall would probably displace the thin dye leaving the shadow which could be interpreted as a possible fibroid or polyp (Figure 5). If, however, the myoma or polyp were on the side, it would give a defect in the contour of the bag.

The advantages of this method over that of injecting lipiodol into the uterine canal, as in a salpingogram, is that the uterine canal is pressed out from its numerous folds and also there is no leakage of the dye through the fallopian tubes or the cervical canal. With the use of the rubber balloon, 6 to 7 c.c. may be injected into the balloon and the catheter clamped, following which the patient may have x-ray exposures made at various angles with distention of the uterine canal of constant degree. This would be impossible by the method of injecting lipiodol into the canal without the bag.

The patient is prepared as for a dilatation and curettage of the uterus, with the preliminary medication the same as for any anesthesia. The field

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

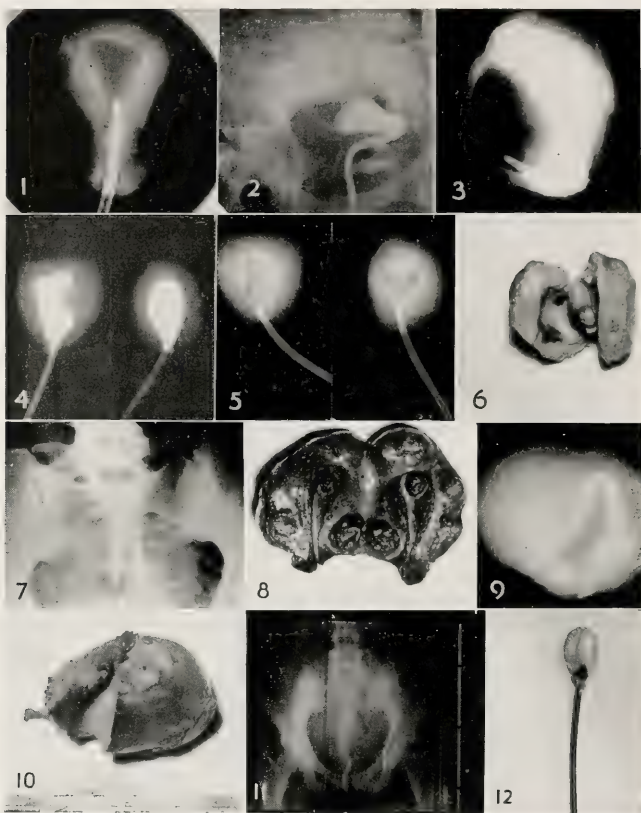


Figure 1 is that of a normal uterus, showing the normal wedge-shaped uterine canal with the bag inserted and dilated with air.

Figure 2 reveals a normal uterine canal, the bag being filled with 12 per cent sodium iodide solution.

Figure 3 is that of a distorted uterine canal caused by a submucosal fibroid. Compare with Figure 1.

Figure 4 is the bag filled with the sodium iodide solution. Notice the filling defect caused by a polyp. Due to the density of the dye, lateral view of same specimen did not reveal the polyp.

Figure 5 is the same specimen with 3 per cent sodium iodide, showing the displacement of the dye by the polyp.

Figure 6 is the specimen.

Figure 7 is a clover-leaf deformity in the air injected bag due to the multiple submucosal fibroids.

Figure 8 is the specimen.

Figure 9 shows a banana-shaped deformity of air-injected bag due to a large submucosal fibroid.

Figure 10 is the specimen.

Figure 11 is that of large abdominal mass in the lower abdomen. When the bag was inserted into the uterine canal and filled with dye, it revealed a normal uterine canal. The mass later proved to be a teratoma of the ovary.

Figure 12 is the balloon attached to a small mushroom catheter.

of operation is prepared as for any vaginal operation. The balloon is sterilized in cyanide. The cervix is then well dilated and the uterine probe inserted into the uterine canal. From the ascertained depth of the uterus the surgeon decides what size bag should be used—a bag three-fourths the length of the depth of the uterine canal. This will allow for the distance of the cervix which the balloon does not occupy. Following the dilatation, the balloon is then inserted with the uterine probe into the uterus. It is best to use the probe to insert the balloon rather than uterine forceps, as the forceps will tend to withdraw the balloon when the forceps is taken from the uterus.

The procedure is very simple and there is little or no danger of harm to the uterus. Certainly, not as much harm as that associated with a dilatation and curettage of the uterus. Following insertion of the balloon, four strips of gauze are inserted against the uterus—antero-posterior and lateral. This is to prevent the bag from being expelled from vomiting or other straining when the patient reacts following the anesthesia. We usually pack the vaginal vault fairly tight with gauze and inclose the catheter into the vagina so that there will be no risk of the patient withdrawing the bag by pulling on the catheter. If a mushroom catheter is used, it is not necessary to use vaginal packing (Figure 12).

When the patient reacts from the light gas-anesthesia, she is taken to the x-ray room and from 6 to 10 c.c. of the dye is instilled into the uterine bag. When the patient complains of the slightest discomfort, we immediately stop the injection of the dye. Since little pressure is used, there is practically no risk attached to this procedure, and when the patient complains of distress it is assumed that the uterine canal is fairly well dilated. A hemostat is then clamped on the end of the catheter and an antero-posterior x-ray exposure is made; then a right-angle, and left-angle, exposure. If it is desired, the patient can then be turned on the abdomen and a postero-anterior exposure made, following which a right-angle exposure over the sacro-iliac region and a left-angle exposure made. By these six exposures, the entire circumference of the uterine canal will be covered, and if there is a submucosal growth or polyp around the contour in these areas it should be revealed. However, as we have stated previously, when the weak solution of sodium iodide is used, the submucosal fibroid or polyp will probably protrude through the dye, displacing the dye and revealing the growth.

There have been no untoward effects from this procedure. The bag being constructed out of very thin rubber of great strength and little pressure being put in the bag at the time of the examination,

the bag has not ruptured in any of these examinations. In several instances we have left the bag in for as long as four days, purposely to see if it would cause any irritation or subsequent fever or profuse drainage. There has been no change in the temperature chart, no vaginal discharge more than would be expected from ordinary dilatation of the cervix.

Our object in working out this method is to encourage the removal of myomas and intrauterine polyps by operative measures less formidable than hysterectomy. If by bimanual examination the contour of the uterus feels smooth and following insertion of the bag no defect is found to suggest a submucosal myoma or polyp, then other methods of investigation should be carried out to determine the cause of the bleeding before the patient is subjected to a major surgical procedure.

We believe by this method that many of the submucosal fibroids or polyps which previously have been difficult to diagnose may be detected. However, we have not had sufficient material to form a firm basis for definite claims beyond those tentatively offered in reporting this experimental work.

NEW TREATMENT FOR SPRAINS AND PULLED MUSCLES

(Hans Kraus, New York, in *Jl. A. M. A.*, June 7th)

The painful region is determined through active motion and ethyl chloride is sprayed on this area of skin. The patient then starts careful active motion of the part involved, in the direction in which the motion has been painful and limited. As the patient carefully increases the movement, new painful areas—which up to this point have been hidden through blocked motion—will develop. Those areas again are sprayed and active motion continued.

These treatments last from 10 to 30 minutes and should be performed well within the limits of pain. Immediately after the treatment camphor liniment is to be applied to prevent frostbite.

Immediate normal use of the affected part can be allowed in a majority of cases, but no excessive strain or sudden movement. Patients with more severe disorders should be given a rest, but all patients should be advised to continue the active movements taught them for 5 minutes from twice a day to once every hour. While a single treatment will be sufficient in cases of minor injury, severe ones will have to be treated several times; the first week daily—later every other day. Effective treatment should not call for the anesthetic after the second week; active motion will have to continue until normal muscular power is restored. Immobilization after treatment is contrary to the basic principle and should never be combined with it.

Groups of cases considered suitable: if no fractures nor complete tearing of ligament, muscle or tendon: 1) sprains of all joints; 2) acute muscular spasm due to lumbago, acute bursitis of the shoulder, pulled muscles, and 3) chronic muscular spasm due to low-back pain, sciatica, chronic osteoarthritis, shoulder spasm and the like.

Whenever treatment with ethyl chloride spray gives a negative result, it will be necessary to look for major changes in the anatomy. Thus this technic may be used as a means of evaluating diagnosis in cases of impaired function.

Hypertrichosis With Particular Reference to Electrolysis*

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INTRODUCTION

THE PROBLEM of the therapy of excessive growth of hair is one which has never been satisfactorily solved from the standpoint of either the patient or the physician. No present-day method of treatment is capable of producing a rapid and safe alleviation of the condition. The methods most used today are generally unsatisfactory from both the therapeutic and the technical aspect; and the method of hair removal using electric currents is uncomfortable for the patient, albeit not unduly so. The number of cases of excessive hairiness is such that every physician sees it commonly, and since it so often produces mental complexes in the patient treatment should be readily available.

Hypertrichosis afflicts men and women, but those seeking relief—mostly for cosmetic purposes—are preponderantly women. In the male excessive hair can be inconvenient when unusually marked about the anal region, and in rare instances it predisposes to follicular eruptions from irritating substances in industry; but in general hirsutism is considered a sign of virilism and is often so prized. Women, however, are considerably disturbed by a slight downy growth on the face, or a noticeable increase of hair on the chest, and are willing to undergo much to be rid of it. The widespread lack of equipment and of training for the removal of excess hair has often led to distressing inferiority situations, these not infrequently going on to more serious mental states.

ETIOLOGY

The cause of excessive hair growth is generally conceded to be associated with endocrine dysfunction, although most of the cases that are seen do present no other signs indicating such dysfunction. Heredity seems to play a role since several generations of a family may show the condition. The association with both hyper- and hypothyroidism is occasionally noted, and careful histories and physical examinations revealing signs of undue tolerance to cold, increased appetite with weight loss, should lead the examiner to have the basal metabolism rate determined. Treatment with small doses of thyroid extract in cases showing hypothyroidism has been followed by arresting hair growth but not by hair shedding. Concurrent disturbances in the menstrual cycle in young women may point toward an ovarian dysfunction, and

therapy aimed at correction of this dysfunction in any specific instance may arrest the growth. The menopause is a common time to find stimulation of the growth of hair; but although the treatment may relieve the menopausal symptoms, it apparently does not affect the course of the growth of hair. In hyperpituitarism, in both the preadult and the postadult types, there is usually an increase in the hair on the trunk and the extremities, but no or slight increase on the face. Hirsutism is a feature of Cushing's syndrome. In general it may be said that most cases of hypertrichosis show no evidence of endocrine dysfunction, and that the treatment of the condition in the absence of clinical evidence of such disturbance with any endocrine substance is without good effect, and may be harmful.

SYMPTOMATOLOGY

The sites commonly affected in the female are the upper lip and the chin, and the inframandibular and temporofacial regions. Localized hairy growths may occur in any location, however, and are usually associated with nevi. The hairs may be very fine, of light color and numerous; or they may be few, dark of coarse texture. As a rule there is an admixture of both types, and in extreme cases the growth may be both heavy and coarse. The time of onset varies, though it is most often seen at puberty or shortly after the onset of the menses, and about the time of the menopause. The appearance of the hair is slow and makes its first unsightly impression after months or years, although in a few instances in which the color of the hair is very dark, it may be fairly rapid. As a rule the patient has used various means to combat the condition before being seen by the physician, and often she blames the type of treatment used as causing the hair to become darker and more coarse; but, save for the use of the wax depilatories which jerk the hairs out from the papillae, there is little evidence to support the view that repeated and temporary removal influences in any way the rate or texture of the growth.

TREATMENT

Depilatories, Bleaching etc.—Treatment methods include depilatories containing wax-like substances which are applied warm to the area involved, and on cooling harden and adhere to the hairs so that removal of the waxy material pulls the hairs out. Other depilatories contain barium

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sulphide in a paste which dissolves the surface hair thus removing it, and frequently gives rise to a severe dermatitis. The following prescription is a good example of a commonly used depilatory.

Rx	Barium sulphide	8
	Pulv. zinc oxide	12
	Starch	12

Mft To a non-gritty powder

Sig Add water just prior to use to make a thin paste. Apply locally to affected parts for about 3-5 minutes and remove.

Various bleaching substances, particularly hydrogen peroxide, are commonly used to lighten the color of the hair when the number of hairs is not excessive. A method has been reported of rubbing daily with a pumice stone over the areas involved for two or more minutes after the patient has shaved the areas closely. This keeps the hairs from projecting above the surface, and it is stated that six months or more of daily use of this method causes atrophy of the hair papillae. The author has had no report on this method as in the few cases in which he initiated it not a patient was able to keep up the daily treatments.

X-Ray Therapy.—The two most common methods of treatment used by the physician are x-ray treatment and electrolysis. X-ray therapy has been emphatically condemned as dangerous by all experienced dermatologists. Any type of treatment which does not single-out the hair papilla for destruction cannot help but destroy other elements of the skin, or at least seriously injure them. X-rays do not have a more destructive effect on the hair papilla than on the other tissues; and the amount of treatment required to permanently remove hair is sufficient to injure other structures of the skin with the probable end-result of disfiguring atrophy and telangiectasis, or even ulceration which may give rise to epitheliomata. It is therefore never advisable to use x-ray therapy for the removal of excess hair.

Electrolysis.—The only safe and reliable method for the removal of excess hair is that of electrolysis. Its effects are permanent, and the treatment is directed to the destruction of the hair papilla alone. None of the neighboring tissues is injured when the treatment is properly carried out. A certain amount of skill and judgment is necessary for its proper use, but a little practice and patience with the method will insure a good and permanent result. Because the method is tedious in cases of involvement of large areas, electrolysis has been largely neglected by the medical profession and allowed to drift into the hands of beauty-shop operators whose training is entirely inadequate for carrying out the technique or for deciding properly which should, and which should not, be treated by this method. The beauty-shop operator is

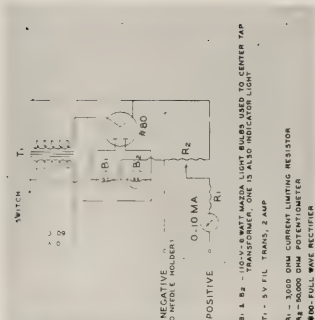


Fig. 1.—Position of operator, patient, and light source. Note positive electrode in contact with patient's hand. The electrode should be firmly grasped after the needle has been inserted in the hair follicle.



Fig. 2.—Complete apparatus ready for operation. The needle holder is attached to the negative pole, marked with a black connector. The positive electrode is a single metal tube and has a red connector.

Fig. 3.—Wiring diagram and description of component parts of current source. The polarity is stable.



willing to carry out the procedure for a smaller fee than the physician can accept, but nearly all patients are willing to pay a larger fee for more skillful diagnosis and treatment. At the present time few physicians outside the largest cities have interested themselves in this work, and equipped themselves to carry it out; which is surprising considering the fact that the work may be done at his convenience, the remuneration is good, with an initial outlay of less than twenty-five dollars for equipment.

Method.—Electrolysis consists of inserting a small platinum or steel needle into each hair follicle so that the tip of the needle is at the hair papilla, and passing a small current through it by means of the negative pole of the apparatus, thus destroying the papilla. Destruction is usually evidenced by a few bubbles appearing at the mouth of the follicle after about thirty seconds, when the hair is easily pulled out. The part to be treated is first wiped off with a fat solvent such as carbon tetrachloride. (Ether is usable but there is some slight danger of ignition.) Some method of asepsis is used such as soap and water followed by 70 per cent alcohol, to minimize infection. The patient supine on a table of suitable height, the operator sits comfortably at the head so that both elbows may rest on the table. A good light source is needed, and a daylight bulb in a standing lamp which may be on a flexible neck is suitable for the purpose (Fig. 1). While binocular loupes are not essential, their use enables the operator to do work much easier and better. The needle is inserted in the direction the hair normally projects from the surface. The number of hairs removed at a single sitting varies, usually is thirty in a half-hour period, but some operators remove as many as sixty in thirty minutes. As the work is tiring and exacting, it is not recommended that a treatment of more than half-hour be given. Contiguous hairs must not be removed at the same sitting as the danger of local reaction is increased with more likelihood of infection and scarring. At least one-half inch between hairs should be the rule.

The amount of pain experienced is negligible if the proper technique is used. Rarely a patient with low threshold for pain is unable to tolerate the procedure. The pain is to some extent dependent on the strength of current used, and cutting down the current will reduce the discomfort. The current used is one-half to one milliamper; occasionally up to two ma. are required. In general, the more current used the more rapid the destruction, but it must be remembered that this also increases the amount of scarring to be expected, and speed is not an important desideratum. The writer recommends the use of the single-needle technique; for, although many needles up to ten or twelve may be

used, the time is consumed by the insertion of the needle rather than by the time the current acts, and very little advantage is gained by using the multiple-needle technique.

Equipment.—The accompanying illustrations and diagram explain the operation and method of construction of the apparatus used. Most electrolysis machines are equipped with dry-cell batteries as current consumption is very small, and the current must be of the direct type. The apparatus used here was designed with the aim of eliminating the need for guarding the current supply, and may be operated from the common source of light supply in the physician's office (Fig. 2). The elimination of the batteries has also permitted the unit to be housed in a space not much larger than the palm of the hand. The apparatus herein described was made by Mr. F. L. Hamilton of the Duke University Instrument Shop. The diagram (Fig. 3) of the wiring will be self-explanatory to any electrical repairman, or electrician, and little further information is required for the construction of the apparatus. The cabinet may be made of any kind of material and its size is only limited by the parts contained. The needle-holder and needles may be obtained from any one of the larger surgical supply houses and the same is true of all other parts of the unit. The forceps should be epilating or cilia forceps, but any forceps with a good grip may be used.

The current delivered is a direct half-wave current, and has minute fluctuations of intensity. This does not affect the operation of the apparatus in any way as the rapidity with which one wave follows another gives a steady output to all intents and purposes. In actual operation no difference can be noted in comparison with a battery operated instrument.

After the patient has finished with the treatment she is instructed to use a mild antiseptic over the area for the next day or two to minimize the possibility of infection. Some type of lotion is preferable such as calamine lotion with 1 per cent phenol, or lotio alba, or lime water—aluminum acetate and olive oil as a liniment may be used if the patient complains of excessive dryness.

Points of importance include the recognition of scarring as indicating poor technique, due to either carelessness or poor light. Such scarring is often more disturbing to the patient than the original complaint, and is irremediable. Of necessity a few small scars will result under the best conditions, but such scarring is not noticeable. As a rule the physician will do well not to take too optimistic a view as to the time necessary to complete the removal of the hairs, as the number is difficult to judge accurately, and in addition, there probably will be more hair growing during

the time the treatment is going on. A relatively large percentage of treated hairs, from ten to twenty-five per cent depending somewhat upon the skill of the operator, will return unavoidably. Many patients undergo regular weekly treatments over a period of a year or more if the growth is diffuse. The time interval between treatments depends largely upon the diffuseness of the growth and the number of hairs removed at each visit. Rare is the case in which a treatment can be given more frequently than twice a week, and most often one-week intervals between treatments will be required to insure subsidence of any reaction of consequence to the procedure. In the presence of infection it is best not to continue until all inflammation has subsided, as such infections tend to be deep-seated and may be difficult to control if widespread.

Contraindications to Electrolysis.—There are relatively few concurrent conditions which contraindicate the use of electrolysis for removal of hair. Infections in the region, whether cocogenic or mycotic, are rigid contraindications. Poorly controlled diabetes, or other debilitating disease which predisposes to infections of the skin, requires proper management before treatment is undertaken. Patients with a tendency toward keloid formation should not be subjected to the procedure as almost every insertion of the needle may give rise to a disfiguring keloidal scar. This possibility may often be ruled out by scrutiny of the patient's skin for old scars, or from a history of such scarring suggestive of keloid formation. It is also important before attempting to remove hairs from pigmented moles and nevi to consider the chance that stimulation may start malignant growth. Usually very dark growths, resembling melanotic tumors, are better left alone. The history of rapid growth in a mole or nevus, or of recent growth, bleeding or repeated trauma in such a lesion, should lead to excision and biopsy rather than to electrolysis to remove hair.

Other Uses for Electrolysis.—The current used in electrolysis may also be used in the removal of small warts and moles, and when so used leaves very small scars. The needle is inserted vertically into the lesion and the current turned on for a few seconds or until the tissue turns white. In lesions of pea-size or larger, the needle may be inserted in a cross-wise manner at several points in their circumference. Hairy moles are best treated by electrolysis, as they tend to disappear after removal of the hairs. The treatment of "liver spots," or spider nevi, which are small superficial dilatations of capillary vessels such as may be seen frequently in acne rosacea, is quite satisfactory by this method also, and consists in inserting the needle in the central point of the spider nevus,

or along several points of the telangiectatic vessel. Electrolysis may also be used for many small superficial and non-malignant epithelial tags and nevi, and with some success in adenomatous sebaceous cysts of the face. It is useful in removal of xanthomatous growths of the eyelids and leaves little scarring.

CONCLUSION

The condition of hypertrichosis can be adequately treated by the method of electrolysis in nearly every case, the exceptions being largely limited to very light growths on the upper lip, and these may be satisfactorily controlled by other methods. Electrolysis still remains the only safe method of therapy, in spite of reports of other agents, notably x-rays and thallium acetate, being easier and as effective. Since the equipment is small in size and expense, and since the results are good with a little care and experience, it is believed that it should be available in competent hands in every community large enough to support a physician.

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ACUTE APPENDICITIS IN MIDDLE AND LATE LIFE

(F. F. Boyce, New Orleans, in *Amer. J. Dig. Dis.*, June)

Acute appendicitis late in life presents a confusing picture and has a high mortality, due both to the seriousness of the disease and to the delay in operation caused by the difficulties of diagnosis.

The symptoms and findings in old people are atypical. The patient gets sick slowly, often after a period of vague digestive distress or diarrhea. The initial pain is mild, often only a discomfort. It may be located anywhere in the abdomen, including the left side, and it localizes slowly if at all. The period of calm tends to be long-lasting, and the patient is likely to be only mildly uncomfortable or even to feel well. Nausea, vomiting, both may be absent. Neither temperature nor pulse rate may rise much. Physical findings are scanty. Abdominal rigidity is frequently absent, and pressure pain or a uniform soft distention is the commonest finding. Leukocytosis is seldom marked and is commonly absent. Surgery is safer in all cases, regardless of the stage in which the patient is seen. The appendix should be removed if this involves little additional trauma; otherwise only drainage should be done. Anesthesia must not be deep.

THE CHANGING PICTURE OF DIABETES MELLITUS

(Reginald Fitz, Boston, in *Neb. Med. J.*, June)

The physician who thinks of specializing in diabetes is tempted to become dangerous; for diabetes is not a specialty. The doctor best fitted to give diabetic patients most satisfactory supervision will be a broad-gauged clinician, interested in all aspects of medicine, up-to-date in all fields, a keen student, a hard worker, and regarding diabetes not as a narrow subject but as a disease presenting such variegated problems as to include the whole scope of medicine.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

A 15-yr.-old high school girl came complaining that she was nervous and had been so all her life. Often she has no appetite for breakfast. Two years ago she grew prodigiously, but has grown little since. She is now 5 ft. 7 in. tall and weighs 104½ lbs. She weighed about 100 lbs. two years ago. She has no gastrointestinal, circulatory, respiratory or urinary symptoms, and her only gynecologic symptom is pain on the first day of her periods. She says she doesn't get a bit nervous while driving a car. She can go through a hard basketball practice without much trouble—gets a bit trembly, but no dyspnea or exhaustion. Her past history, habits and family history throw no light on her trouble.

Examination of the head is negative—there is no exophthalmos. She is very tall and thin, and looks like many girls of 18. She has a moderately large smooth symmetrical and slightly tender goiter. She has no tremor and steps up on a chair without difficulty. T. 98.0, p. 88, of good quality, r. 16, b. p. 92/64. Her heart and lungs were entirely negative. Her abdomen showed obvious visceroprosis and some epigastric tenderness. There was an obvious error in her basal metabolism report as plus 121. Her urine was negative.

Discussion: Her age, her physical strength, the physical characteristics of her goiter, her normal heart rate, her lack of appetite for breakfast, the lack of tremor, and the whole general picture, suggested a colloid adolescent goiter. Another B. M. T. was reported as minus 29! On overfeeding she made an uneventful recovery.

Diagnosis: Colloid goiter.

A 33-yr.-old wife of an advertising man complained of nervousness. She stated that 3 wks. ago she fell while walking across a field, and her left arm got numb. She thought she had had a stroke, but managed to drive her car home. A month before this episode she had a very severe vomiting attack, for which another physician gave her a hypnotic, and she slept all day. Then she was studied at a clinic, but nothing was found to explain her trouble. She then went to Florida, as her trouble was supposed to be a nervous breakdown. Two years ago she had a ruptured appendix removed. Even before her operation, and also since, she has had attacks of blind staggers and palpitation. Often objects seem to move before her eyes, and she sees black-and-white specks. These attacks come about 10 days before her menstrual periods. She feels numb all over all the time. No nausea or vomiting except in the one

attack mentioned—she does not vomit even when pregnant. Her stomach is always sour, for which she takes soda. Too much soda causes diarrhea. No sore throat or cough. Always short of breath and panting. Feet do not swell, but hands do occasionally before her periods. She gets a cold in her head and slight headaches before every period. No backache. No urinary symptoms. Periods come every 26 to 28 days, last about a day, no flooding, rarely clots. No suffering other than extreme weakness. Has been taking liver extract, and is on her 3rd bottle, because her sister has pernicious anemia.

She had diphtheria in childhood, severe influenza in 1918; measles, chickenpox, whooping cough and mumps in childhood, drainage appendectomy as noted 2 years ago, and had her tonsils and adenoids removed 10 years ago. When 4 yrs. old she fell through a banister and cut her jaw, and afterwards they removed teeth from the left side of her thyroid!

Her appetite is usually poor, but she is hungry for 2 or 3 days a few days before her periods. Always nauseated on waking in morning. Says meat makes her dizzy. Does not perspire very much. Habits in general good.

Her father died of some unknown acute illness when she was quite small. He was a rather heavy drinker. Mother nervous and worries, and has high blood pressure; 1 sister has pernicious anemia; 1 brother not very strong, but in fair health; 2 sisters died in infancy. Husband and 3 children well. No miscarriages.

Ht. 4 ft. 10½ in. Wt. 88 lbs. weighed 93½ lbs. 3 mos ago; standard wt. 121 lbs.) T. 99.0, p. 112, r. 20, b. p. 124/78. Some exophthalmos. Slight nystagmus on attempting fixation. Head otherwise negative. Tonsils out clean. Neck shows a scar on the left from the removal of the teeth from her thyroid at age of 4 yrs. Thyroid slightly enlarged. Fine rapid tremor of fingers. Heart negative except for the tachycardia. Lungs negative. Abdomen shows appendectomy scar. There is tenderness over the left kidney in the back. Otherwise abdomen and back negative. Pelvic examination negative except for hemorrhoids that do not bleed. Urine negative.

Diagnosis: Exophthalmic goiter.

Discussion: There are several factors of interest in this case. The vomiting attack may have been a thyroid crisis. The numbness suggesting a cerebral vascular accident is a bit unusual, and probably threw the physicians who examined her in the clinic off the track, as this clinic is usually very keen to discover goiters and eager to operate on them. The diarrhea, attributed to too much soda, may have been a toxic manifestation of her dis-

ease. To have your teeth knocked into your thyroid would certainly be an unusual experience. I suspect the clinic did not learn about this because of failure to ask the routine question as to what serious injuries she ever had in her life. The lack of free sweating is a point in which the clinical picture is incomplete. However, the complete picture of exophthalmic goiter is far less common than various incomplete syndromes. The patient consulted Dr. Addison G. Brenizer, who confirmed the diagnosis, performed a thyroidectomy, and she made an uneventful recovery.

A 59-yr.-old wife of a farmer complained of a sensation of choking in her neck whenever she would catch a cold. Five years ago, while sitting before a mirror, she noticed a small asymmetric goiter. A year later she went to a physician who told her to let it alone unless it gave trouble. She thinks it is growing some, because her throat now feels full and she has a choking sensation when she catches cold. She denies being more nervous, but her son says she has been getting very nervous. Her appetite is good, but not ravenous, and there has been no recent change in it. She occasionally has a sour stomach, and has noted some increase of gas of late. She has slight dyspnea at times. Her past history throws no light on her present trouble. She had pneumonia at the age of 35, has had many attacks of influenza, one in 1918 being severe, and two years ago had her gall-bladder drained for cholelithiasis and her appendix removed. Her habits are good, her family history non-contributory. Physical findings were negative except for the following: Possible *very slight* exophthalmos and lid lag. She has not noted any increase in prominence of her eyes. There is an asymmetric goiter unusually low in her neck, the left lobe more enlarged and tending to dip down behind the left sternoclavicular joint. She has no tremor. There is some arthritis of the fingers. Her heart is normal and other chest findings negative. The abdomen is negative save for slight tenderness in the region of cholecystostomy scar. The uterus is fixed in the pelvis, and a mass that feels like either a fibroid or a dense mass of adhesions is behind the cervix.

The diagnosis here, for our purposes, is a *non-toxic adenoma of the thyroid*. Incidental findings are abdominal adhesions, a possible asymptomatic fibroid of uterus and arthritis of the fingers. Our advice in this case was what Dr. John B. Deaver used to call masterly inactivity. Let the goiter alone unless it begins to cause pressure symptoms or develop toxicity. Should it do either, consult a surgeon.

A 39-yr.-old single woman, pastor of a small church in the outskirts of town, complained of

weakness. She had recently studied for the ministry in Cleveland, where he stayed three years, and while there got very nervous. She says she overworked there. Now she is nervous only at her menstrual periods, and has no other menstrual difficulties. She is very subject to tonsillitis, has some general headache, worse in frontal region, occasionally frequency of urination without dysuria. Her appetite has increased, but her weight decreased during the past 3 months. Her past history, habits and family history are non-contributory. She is a rather thin woman. Her tonsils are small and buried. There is a slight irregular nodular enlargement of the thyroid. Her heart sounds are a little rapid and distant and there is a fine rapid tremor of her fingers. Her physical findings otherwise negative. A clinical diagnosis of toxic adenoma of the thyroid is made, B. M. T. is plus 22. Thyroidectomy was performed by Dr. J. T. Burrus and in a few months she had regained her strength and gained considerable weight and felt quite well.

Through this discussion of the various types of goiter, I have used Plummer's classification, distinguishing toxic adenoma from exophthalmic goiter. I am fully aware that most recent pathologic reports state that the "toxic adenoma" usually is not an adenoma. Many believe that toxic adenoma and exophthalmic goiter are merely different stages of the same disease. The same may be said for toxic adenoma and non-toxic adenoma. The classification is perhaps unpardonable from a pathologist's standpoint; but in the present state of our knowledge, it seems to me useful from a clinician's standpoint. No doubt a better terminology is needed to define the clinical groups, but such is not available thus far.

MEDICAL COLLEGE MAY RUN THROUGH THE SUMMER DURING THE EMERGENCY

(Editorial in *The Recorder* of the Columbia Medical Society of Richland Co., S. C., June)

Trustees of the Medical College of South Carolina, at a special meeting at Hotel Columbia, on May 20th, went on record as favoring operation of the college 12 months a year to overcome the increasing shortage of physicians in the State. The trustees decided some weeks ago to increase each freshman class to 50. The financial need to meet this increase was carried before the free conference committee of the general assembly and provision was made.

With operation of the college 12 months of the year instead of nine, the next senior class would be graduated three months ahead of schedule and the present junior class six months ahead of schedule.

It was explained at the meeting May 20th that the British government had requested that English physicians be educated in this country. The board was of the opinion that vacancies occurring in the upper class could be filled by these foreign students, but that the college was operated by South Carolina money and that needs of the State and its citizens must come first.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

UNDULANT FEVER

FOUR HUNDRED YEARS before the time of Christ, Hippocrates described a disease characterized by prolonged fever with relapses and remissions, but which usually did not terminate fatally. This was probably what we now call undulant fever or Brucellosis.

About 1863 Marston, a medical officer in the British Army, stationed at Malta, described this disease in detail under the name Mediterranean remittent fever.

In 1886 Bruce discovered the etiological organism. Later Bang discovered another organism of the same family, which he called *Brucella abortus*, and to which he ascribed the causation of contagious abortion of cattle. Then later it was found that these two organisms were practically the same germs.

Carpenter in 1927 found that the same organism which caused infectious abortion in cattle, hogs and other domestic animals could also produce in human beings a disease clinically the same as undulant fever, and which was also known as Malta fever.

These organisms were then reclassified under the name *Brucella*. From this we get the name Brucellosis, which is perhaps the best name for the disease. Other names are Malta, Mediterranean, or goat, fever; Bang's disease, Texas, Gibraltar, Rock, and Mediterranean Coast, fever.

Doubtless many thousands of cases of this disease go unrecognized, many such patients never consulting a doctor, and many others being wrongly diagnosed. It seems probable that the disease in a mild form is the cause of many thousands of cases of ill health, or even invalidism, in all parts of this country, and in many foreign countries.

The chief method of transmission of organisms of the *Brucella* group is by means of raw milk from infected cattle. The disease is very contagious under certain circumstances, and the rate of infection among those who handle infected meat is very high. This disease may be prevalent among sheep and horses. Even dogs may harbor the infection. It is likely, however, that these animals have very little to do with the transmission of the disease to human beings. More likely milk, carrying the organisms from infected cattle directly to those who drink the milk, is the principal means of transmission to human beings. It seems that there is no record of a case in which there has been a direct transmission of the infection from one individual to another.

Owing to the fact that this is one of the most

protean of all diseases and that the laboratory tests are not always reliable, the diagnosis of the disease is often extremely difficult.

We may speak of Brucellosis as acute or chronic. The symptoms of these two groups vary greatly and are often confusing.

Acute Brucellosis comes on sometimes gradually with malaise, often with a chill and fever, followed by weakness and depression. The wave-like course of the temperature—down in the mornings, up in the evenings—gives the disease the name undulant (*L. undula*=wave) fever. As soon as the course has become definite, we have a patient who complains of feeling tired and depressed, with appetite poor, headache and often backache, often chills, fever and sweating, mostly during the night—the bed may be drenched. Other common symptoms are: pains about the joints, muscular pains, neuritic pains in the neck, shoulder and back and various parts of the body. The joint pains persist or recur from time to time. The neuritic and joint pains cause a great deal of discomfort and often agony. Sometimes there is arthritis with swelling of the joints. Headache, vertigo, diplopia, rigidity of the neck, aphasia, may occur in any of the various stages. Some patients cannot sleep; sedatives and hypnotics often, and opiates sometimes, are required to give rest. Delirium is common, from slight to so wild and violent as to be distressing to patient, family and friends. Meningitis, myelitis, encephalitis may occur in the course of this disease.

There may be a psychosis so mild as to be overlooked by the doctor, or so extreme as to constitute the major feature of the condition. Gastrointestinal pains and constipation are common and may cause confusion with surgical lesions of the abdomen. Some say that pulmonary symptoms are commoner than most reports would indicate. Cardiac lesions should always be watched for. Vegetative endocarditis is not uncommon in this disease. We may also find prostatitis, seminal vesiculitis or orchitis and epididymitis as complications. Soon the patient loses weight and strength and these losses may be extreme. Sometimes there is a maculopapular skin eruption. Recently I saw a patient in which the skin eruption was severe and covered the entire body.

Chronic Brucellosis offers special difficulties as to diagnosis. The signs and symptoms may be so mild as not to attract the patient's attention and he never consults a doctor at all about his symptoms. The temperature taken and charted over a period of a few days will often show a more-or-less typical curve. The agglutination test and skin test are not always definite, and when the disease is present these tests may be negative. The physical findings are often practically nil.

A patient complains of feeling bad, of depression, weakness, loss of appetite, loss of strength, no desire for work or report for duty—nothing even strongly suggestive of any certain disease. Insomnia, general depression; pains in various parts of the body, especially the neck, shoulders and arms; backache, headache, severe and deep muscular pains are all common in this disease. Sweating, especially heavy night sweats, chilly sensations, dizziness, tachycardia and abdominal pain may be present and keep the patient uncomfortable, if not quite miserable.

A psychosis so slight as to be almost unrecognizable, or any mild nervous symptom for which an explanation is not forthcoming by a careful and detailed examination, may well lead to suspicion of Brucellosis. In any case of chronic ill health, not otherwise explained, the possibility may well be taken into account along with a dozen others.

The diagnosis depends on the symptoms given and the results of certain laboratory tests which may be of help. Often, however, in pronounced cases of Brucellosis, the laboratory tests may be negative throughout, especially the agglutination test. The most accurate methods of diagnosis depend on making cultures of Brucella, and inoculation of animals with the spinal fluid or other discharges of the body. The skin reaction when the Brucella vaccine is injected will help sometimes. The diagnosis of Brucellosis may have to be made on symptoms and clinical findings. Being on the alert for this disease will cause it to be recognized in a large proportion of cases. Unless it is kept in mind many cases will pass unrecognized.

Prevention of this disease should be centered in the selection and testing of dairy cattle. Milk from cows having this disease is not to be used for food. Such cows' meat may be eaten because the meat is cooked and that kills all the germs.

As a routine preventive measure I advocate the pasteurization of all milk used for human consumption.

Treatment of undulant fever or Brucellosis is not so very satisfactory, though in our experience here excellent results have ensued on the use of fever therapy. Of one family several members had definite clinical Brucellosis, and a cure followed fever therapy in each of these patients. All recovered promptly and, so far as I know, there has been no recurrence. Serum therapy may be helpful. The serum is available from most of the drug houses. In the chronic form serum therapy is hardly indicated. Convalescent human serum would be a natural treatment for this disease, but unfortunately we have great difficulty in finding immune patients, that is, those who have had the disease and recovered and whose blood might be

used in a transfusion to a person who has the disease in an active form. Recently we tested carefully the blood of a number of patients who have recovered from Brucellosis and almost none of them showed titre high enough to be of much value to the patient. We did, however, give repeated blood transfusions of whole blood from young, healthy individuals in some of the cases and the patients picked up rapidly and have been recovering gradually ever since. It seems that the fever therapy is almost a specific for this disease.

Now, since a standard vaccine is available, I believe that it would be well to immunize donors who can give blood to a patient and who have blood compatible for that patient, and at the proper time give the patient the advantage of this immune blood. In such cases, I advocate a whole-blood transfusion by the citrate method. This is usually very simple, very easy and most satisfactory.

Prognosis is not always so good. The disease tends to persist for weeks, months, or even years, and there are sometimes remissions and relapses which are distressing and disappointing to all concerned. At the present time we are immunizing donors for the purpose of future patients. The results will be awaited with a great deal of interest and hope.

We have tried the various sulfonamides. The results have been disappointing. It is stated that sulfathiazole is of value. Our opinion is that we must look elsewhere for treatment which will produce curative results in this disease.

Hospitalization, blood transfusions, especially from immune individuals, and fever therapy are our main lines of treatment in undulant fever. Treatment of the symptoms as they arise is important. No patient should be allowed to roll, toss and tumble in the bed worrying, feeling depressed, suffering from neuritic pain, with aching in the muscles, without having something given for relief and for sleep, both of which are extremely important.

Brucellosis, or undulant fever, is far more prevalent, I believe than any of us has suspected heretofore. Every doctor should be on the alert for clinical manifestations of this disease. The chronic invalid should always be checked over carefully and the presence of this disease ruled out before a final diagnosis is made. The treatment should always be initiated at the earliest possible time and should be kept up until the patient is relieved. Persistent, correct treatment usually gives good results. There are, however, cases which do not do well and in which the prognosis is ultimately very bad. More and more patients with obscure conditions are coming to the doctor nowadays and every medical man should be on the alert for this disease. In the history of the patient, we should study any

obscure condition carefully, the relationship of that patient to sources of infection and the probable source of contagion. Careful investigation of a herd of cattle may be necessary in order to establish a diagnosis.

Examination with every possible laboratory aid is of vital importance and we should overlook nothing which may enable us to make an accurate and definite diagnosis in every patient apparently suffering from this disease. Prompt, proper and active treatment often gives wonderfully good results and a rapid clearing up of the symptoms. We must remember, too, that in some cases the progress is slow and often everyone becomes discouraged, depressed and doubtful of the outcome.

To Dr. Walter M. Simpson of the Kettering Institute for Medical Research of Dayton, Ohio, we are indebted for a great deal of information on this disease.

THE HISTORY OF ENDOCRINOLOGY

(A. P. Cawadias, in *Proc. Royal Society of Med. (London)*, April)

As early as the 18th century Theophile de Bordeu wrote of emanations from the various body tissues penetrating into the blood. Brown-Sequard and d'Arsonval in the 19th century developed this idea more scientifically. Internal secretion is a function of all cells. There are cells, however, isolated in various tissues, which possess this incretory power to a higher degree; somewhat loose groups of these endocrine cells constituting diffuse endocrine organs. The highest form of specialization is the grouping of such cells into the real endocrine glands.

The first experimental proof of internal secretion came from John Hunter in 1792. Berthold in 1849, completing the experiments of Hunter, showed that castration in the cock caused atrophy of the comb, but that this could be prevented if the testis were transplanted to another part of the body.

In 1855, Claude Bernard published his *Lessons on Experimental Physiology*, in which the doctrine of internal secretion is definitely established experimentally; Thomas Addison published his classic *On the Constitutional and Local Effects of Disease of the Suprarenal Capsules*; and Brown-Sequard made the first experiments in adrenalectomy. From that time onwards physiological knowledge of the endocrine glands progressed rapidly. Their internal secretion was shown to consist of spacial chemical substances, the hormones (a term used first by Starling in 1905.)

The last phase in the history of the special physiology of the endocrine glands is the discovery of the integration of these glands and of their regulatory role in the metabolic processes of the body. Through the work of Harvey Cushing and of Langdon-Brown the endocrine glands have been demonstrated as constituting a system integrated by the pituitary. All cells of the body possess special metabolic functions. The endocrine system regulates, correlates, and integrates all these local cellular metabolisms.

A new phase of research, which has already led to startling results, bears on the connection between hormonal and nervous functions. Anatomists, physiologists, and clinicians have demonstrated that many so-called endocrine diseases are due to nervous lesions. Langdon-Brown holds that most of these nervous stimuli act first on the hypothalamus. From this nervous fibres transmit a nervous impulse to the pituitary, which secretes its special or endocrinotropic hormone influencing other endocrines. Others

have demonstrated that the "nervous" function is in fact a neurohormonic function, that the nervous impulse acts through a hormone released at the termination of the nervous fibre.

Through the extended nervous system the body adapts itself to environmental stimuli. Its effector component is divided into three sections, neurosomatic, neurovisceral, and neurometabolic (or neuro-endocrine).

Hippocrates studied hypochrismidism, the disease of the Scythians, and climacteric hypochrismidism. Hypothyroidism was studied first by T. B. Curling in 1850, when the role of the thyroid in cretinism was shown. This conception of hypothyroidism as a disease was elaborated later by Sir Charles Henry Fagge in his description of congenital hypothyroidism (1871) and in Sir William Gull's description of adult hypothyroidism (1873). Other endocrine diseases have been described, unattached symptom complexes have been shown to be linked with endocrine dysfunction, diseases described as "of metabolism"—diabetes, obesity and even gout—have been included in endocrine nosography. Diseases of metabolism are abnormal states of the regulators of metabolism, that is, of hormones and vitamins (which are a sort of external hormone).

Endocrinotherapy began with Brown-Sequard in 1889; thyroid orgoanotherapy with G. R. Murray in 1890, and developed intensively of recent years. Events are the introduction of insulinotherapy by Banting in 1921, of the various sex hormones, and of cortin.

With knowledge of the neurohormonic connections the extreme, localistic point of view has been abandoned, and Graves' disease, diabetes insipidus, and many other diseases are regarded, not always as local endocrine disturbances, but frequently as neurohormonic disturbances. Endocrinotherapy can no longer be considered as the sole method of treating these disorders; and the role of psychotherapy, dietotherapy, physical medicine and certain constitutional medicines is accepted more and more widely. Endocrine gland surgery is rendered more effective when used in conjunction with general constitutional therapy.

With the wider and more synthetic conception of contemporary endocrine physiology a more complete and effective therapy is possible.

SUSPECT HYPOTHYROIDISM OFTEN

(A. M. Schwittay, Madison, in *Wisc. Med. J.*, June)

Occult or mild hypothyroidism with few or none of the physical signs of myxedema, but with the fairly constant complaint of fatigue, is very prevalent in Wisconsin and is too frequently overlooked.

Any patient who gives a history of having frequently sought medical help, or been operated upon with disappointing results, and all women with menstrual disorders should be studied from the point of view of thyroid function. Contrary to a widely-held prejudice among laymen and some physicians, toxic results from overdosage of thyroid will not leave permanent results. When the drug is withdrawn or decreased, symptoms subside.

Thyroid extract must be fresh and of a known potency. Physician, pharmacist, and patient should be educated to this. We use Armour's or Parke Davis' desiccated thyroid.

Many patients may need to continue it all their lives. In a few it may be discontinued after varying periods.

THERE were no deaths among 11 patients suffering from meningitis who were treated (J. H. Dingle & L. Thomas, in *J. A. M. A.*, June 14th) with sulfadiazine and the drug also is preferable to sulfapyridine in the treatment of this disease because it is less toxic. Nausea, vomiting, mental symptoms and other reactions often attributable to sulfanilamide drugs did not occur.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

PSYCHE AND MARS

ANNUALLY, every mid-summer since 1927, at the University of Virginia, the Institute of Public Affairs has proffered to the citizenship opinions about current problems. Distinguished speakers, from here and there, have presented analyses, evaluations and opinions—their own opinions, usually, and sometimes their opinions of the opinions of others. Such a ten-or-twelve-day assemblage each summer enables those who present the program to indulge the hope that they are educating the citizenship; and those who attend the Institute are encouraged and comforted by the belief that they are still students in search of truth.

But he who would acquire knowledge must first make room for it within his mind by the expulsion of ignorance and prejudice. The willingness to exchange ignorance for truth requires appreciation of one's predicament and the courage and the zeal requisite for the procedure. Most of us are intellectually indolent, and we prefer to utilize our energy in approving ourselves as we are rather than in attempting to make constant changes in ourselves. The search after truth, once entered upon, is a never-ending adventure, which may lead one far from the crowd and away from the beaten path; and those lacking in fortitude and those who object to solitariness and to probable disapproval of herd-opinion might better stay at home, both physically and mentally.

On the afternoon and the evening of July 3rd, Dr. H. C. Henry and I lent our ears to the program of the Institute which was presented in co-operation with the Mental Hygiene Society of Virginia, under the presidency of Dr. David C. Wilson, of the Department of Neurology and Psychiatry of the University of Virginia. Medical speakers, especially, of great intellectuality and of profound experience in dealing with the human mind in peace and in war, talked to us—on the level and not down to us. Dr. Harry Stack Sullivan, of Washington, who is consulted by the Selective Board about psychiatric problems, gave us a descriptive account of those individuals who, because of their peculiar personalities, cannot fit into an army as soldiers. Such individuals constitute disrupting factors in the service, and the attempt to make fighters of them produces wrecks of them. It is easy enough to believe when listening to Dr. Sullivan that every recruit should be as intelligent as Plato and as stable and as philosophic as Socrates. But, one thinks of Joan of Arc and her hal-

lucinations, and of Julius Caesar, with his fits; and here at home, of Grant, the alcoholic; Forrest, the great cavalryman, though an academic illiterate; of old Sam Houston, who could endure no civilization except that fabricated by himself, and of Stonewall Jackson, whose peculiarities added to his great fame. Had the mentally abnormal been forbidden always to express themselves on the field of battle, in literature, and in other phases of action, human history would be infinitely duller than it is. Mediocrity and dullness are not, I hope, synonymous, but normality seldom arouses keen interest. The straight line is shortest, it lends itself more easily to inspection, but we are interested in departures and in deviations. Military service certainly offers the individual the opportunity to express himself as he is—both in the lower and in the higher levels.

Dr. Karl Menninger, of Topeka, who gave us a few years ago *The Human Mind*, talked to us especially about the work of the physicians who have to pass upon the medical fitness of the young men for service. I always feel that the functioning of man's attributes in formulating his conduct is as comprehensible to Dr. Menninger as the movements are that result from muscular activity. And both he and Dr. Sullivan are linguistically gifted. They can convey to others by the use of words their ideas and feelings. And for that great gift they should thank the gods. Dr. Menninger talked analytically of the meaning of the term civilian morale, and of the fundamental importance of it as an asset of incalculable value both in the fighting man and in the folks back of him—in his own family, in industry and in government. The soldier fights with his physical body, but he is inspired and sustained by his spirit.

Dr. Charles Macfie Campbell, Scotch through and through, came down from his professorship of psychiatry in the Harvard Medical School to talk to us about national morale. One feels instantly, in meeting Dr. Campbell, that he can think only sensibly and that whatever he might feel inclined to say about anything would be well worth hearing. He has been with us and out of his native Scotland many a year, but such mental sprightliness as his is not often encountered. And the Scot, personally and traditionally, knows war; and the Scot estimates and appreciates perhaps as no other individual does, the value of the spirit. Dr. Campbell is saturated with learning and steeped in culture, but he is a genial, unpedantic scholar, and a teacher who dignifies the human psyche by encouraging his students to make use of their minds. It is scarcely necessary for him to speak of the meaning and the importance of morale—he demonstrates its value in his life, and Scotland's national spirit has given her immortality.

Most of the addresses made at the Institute have been mimeographed and they can be had at small cost.

It is well for the people to gather together from time to time where they are encouraged to make use of their minds in dealing with their individual and civic problems. The first preparation for war takes place within the psyche. In an emergency man is sustained by his spirit rather than by his brawn. I doubt not that Mars relies more upon the psyche than upon the soma.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

INCLUSION BLENNORRHEA

SINCE the uplift has made syphilis and clap ordinary subjects of conversation anywhere and everywhere, few there be who would not charge one of the parents with having gonorrhea when the eyes of a child a few days old put out a profuse whitish discharge; and lucky would be the doctor who cared for the delivery to escape violent censure.

For these and other reasons it is well that all of us obtain familiarity with inclusion blennorrhea.¹

Inclusion blennorrhea is caused by a virus infection, and is a venereal disease. The baby becomes infected while passing through the birth canal. The inclusion bodies have been recovered from the cervical epithelium of women whose babies have been infected. The husband will often give a history of some urethral or prostatic infection which often has not been proved gonorrheal.

Specimens obtained by rubbing a knife gently across the palpebral conjunctiva of the lower lid until it just bleeds are placed on a slide and stained with Giemsa or Wright stain. The inclusion bodies are found as basophilic granules in the epithelial cells.

Generally four to seven days after delivery one or both eyes of the infant are swollen, and there is a large amount of serous exudate. The inflammation is often confined to the lower lids. In adults it is generally a follicular conjunctivitis.

The advantages of making the diagnosis are (1) the doctor may put at rest suspicions of gonorrhea; (2) he may tell the parents that the eyes will not be injured, and (3) that sulfanilamide may be given to shorten the length of the disease.

Inclusion blennorrhea was found 34 times in 261 cases of ophthalmia neonatorum.

Conjunctivitis in babies should be regarded as a very serious condition. The local treatment is the same whatever the etiology. The patients are isolated with a day and night nurse who is in-

structed to irrigate the eyes very half hour, and to place ice compresses on the lids for 30 minutes every hour. Aqueous mercurochrome, 1 per cent, is dropped into the eyes every four hours. The doctor once or twice a day paints the lids with silver nitrate, 1 per cent. If the cornea becomes hazy, the compresses are changed to hot. After a diagnosis of blennorrhea has been made stop the use of silver nitrate, and use 1 per cent aqueous mercurochrome three times a day.

Sulfanilamide is given in milk, daily, in dosage of $\frac{1}{2}$ to $\frac{1}{3}$ rd grain, with daily check on the red blood count. In adults 10 grains, t. i. d., with a weekly check on the red blood count, continued for two weeks; then 5 grains t. i. d. for another two weeks. Usually the condition appears much better at the end of the first week; and by the third week is completely healed.

CHRONIC ALCOHOLISM AND ALCOHOL ADDICTION¹

NOWHERE in medicine is the survival of archaic *post hoc ergo propter hoc* thinking more apparent than in theories concerning alcoholism and its treatment. This is the conviction as to practitioners of medicine participating with families of alcoholic patients in various plans which depend for their hoped-for effect upon persuasion and threat, reward and punishment, usually ending in eventual incarceration. These plans and methods conspired to wrap the alcoholic even more tightly in the swaddling clothes of emotional immaturity. The only hope for the alcoholic, psychologically speaking, is to be stripped of the garments of his immaturity so that he may learn to face himself in the nakedness of truth.

Contrary to general opinion, the alcoholic is not so likely to be a "hail fellow well met." There is a deal of drinking among those whose dominant traits are out-going and social, but the real, purposeful consumption of alcohol is more common among those who tend to look inward and who are not socially facile. For them, it lessens the usual friction of the social wheels and makes contact with their fellow men bearable and even pleasant. Once the potential alcoholic has satisfied the surface reasons for his drinking he soon begins to drink pathologically. Here we are dealing with the ever-present necessity for a technique which may be relied upon to blur the sharp outlines of reality.

A valid psychological method of treatment substitutes a skilled therapist for the wife, or husband, or the family, and sometimes too, for the physician, who has been induced to play at the game of pseudo-treatment. His attitude is strictly impersonal, objective and unemotional, and from the very beginning he declines to deal with anything but the mature segment in the personality

1. H. D. Barnshaw, Camden, N. J., in *Jl. Med. Soc. N. J.*, June.

of the patient, no matter how minute that segment happens to be. The therapist is the clinical clerk noting the history as it is unfolded, interpreting its significance, guiding but never dictating. He does not even give directions as to the details of living surrounding the question of alcohol. "Shall I have alcohol in the house?" "Shall I serve it to my friends?" "May I go to the bar of the club?" The only mature, logical answer to such questions is this: "You shall, may or can, or you shall not, may not or cannot, just as you yourself decide."

The therapist acts as an inhibitor of the tendency of the patient to travel into the paths and by-ways of self-deception or rationalization. The therapist knows full well that while an alcoholic person may be genuinely and miserably remorseful at the contemplation of the unhappiness of his wife, the degradation of his children, or the sadness of his old mother; yet the inevitable result of such pathos will be to drown it in the bathos of a tidal wave of alcohol.

The highest hurdle that the alcoholic patient must finally succeed in clearing is that of the acceptance of a completely nonalcoholic future. When he finally does attain the emotional stature of adulthood, he understands all too well that no ego belittlement is involved in the self-made decision, that the only possible choice is never to take alcohol again.

Even when a change of occupation seems highly desirable it would be unwise, and contrary to the spirit of the treatment, for the patient simply to take the therapist's word for the change. In other words, in this, as in all other things, the patient, from the vantage point of his increasing maturity, must make his own decision.

Too many rules would negate the value of such a plan or reeducational therapy. Two considerations to which the prospective patient must subscribe before the therapist is willing to accept him for treatment. The patient must convince the therapist that he is undertaking treatment because he, himself, has recognized the necessity of attempting to emerge from the depths of this alcoholism and because, too, he feels that this plan of treatment promises a likelihood of accomplishing this purpose. Patients who present themselves for treatment under promise, overpersuasion, threat or duress from the family will not succeed in getting well.

The patient must be willing to agree to notify the therapist as soon as possible in the event of a relapse.

This reeducational plan of treatment is psychological in its perspectives. It is truly eclectic, since it utilizes in its plan every important experience and reaction of the personality in the life history of the patient.

The psychotic, the severe psychopathic and the feeble-minded alcoholics cannot be subjects of treatment for alcohol addiction. The place for the psychotic and many of the psychopaths is in the mental hospital. Some of the feeble-minded drinkers belong in institutions for the feeble-minded and some should be handled by the penal system.²

The question of the treatment open or closed institution or outside of an institution must be reconsidered on each individual case. A quick tapering off, rather than immediate withdrawal, seems to do no harm.

All types of drug treatment, including conditioning, even if successful in eliminating the symptom, leave the patient with the same basic difficulties that he had before.

Drug treatment may, however, be useful and even the treatment of choice in the case of those drinkers who have come to their addiction by way of environmental factors rather than by way of basic conflicts.

Substitutive treatments, mainly religious conversion, do not reach the underlying personality conflicts, but they afford a radical reorientation of the personality and therefore achieve a certain amount of success.

Psychotherapies, as they are applied at present, may have an average success of 25 to 30 per cent in terms of 2 to 4 years of total abstinence.

General hospitals, although not suitable for the treatment of addiction, should initiate such treatment in their patients and establish contact between the patient and welfare or temperance societies.

Effective psychotherapy must be made available to much larger numbers than is the case at present. Public provision is made in this country only for the treatment of patients with alcoholic psychoses.

1. E. A. Strecker, Philadelphia, in *Quar. Jl. Studies on Alcohol*, June.

2. K. M. Bowman et al New York, in *Quar. Jl. Studies on Alcohol*, June.

PEDIATRICS

EARLY DIAGNOSIS OF POLIOMYELITIS

By keeping it constantly in mind that any case of illness coming on with vague feelings of discomfort and slight fever may turn out to be poliomyelitis a doctor may serve his patients better and save himself embarrassment. An excellent article¹ on this subject is given in abstract.

A report² made in the past month appears to establish the alimentary tract as the avenue of entrance of the virus of the disease.

The incubation period is 14 days, extremes 7 to 21 days. First is the mild systemic stage, then

1. S. O. Levinson, Chicago, in *Ill. Med. Jl.*, June.

2. A. B. Sabin, Cincinnati, to National Foundation for Infantile Paralysis.

the stage of meningeal irritation, preparalytic, and the final paralytic stage. The disease may spontaneously terminate at any stage. Ample grounds for belief that most infections with poliomyelitis never extend beyond the first stage of a mild malaise with upper respiratory or mild gastrointestinal symptoms, fever 101° , a mildly injected throat and some cervical lymph adenopathy. The spinal fluid at this stage shows no abnormal changes.

The wise physician will not ignore such an illness, but will continue to observe the patient for further eventualities. If not abortive, it progresses to the second stage either without interruption, or after an interval of 12 to 48 hours during which the patient appears to have recovered.

In the second stage of the usual spinal type of poliomyelitis, fever is 101 to 102° , headache frontal or diffuse, irritable, anxious and complains of pain in the back of the neck and in the lumbar area, and of the weight of the bed clothing or if child, does not like to be held by its mother. The patient is usually very alert and responsive. Tremors of the extremities of various types may be noted. The face is usually flushed; frequently there is circumoral pallor. Diaphoresis may be marked, also be moderate injection of the pharynx with cervical lymphadenopathy. Slight or moderate neck rigidity with resistance to complete flexion of the head, moderate back rigidity may be elicited. A head-drop is frequently present. The spine sign may also be observed when the child is asked to assume the sitting posture, due to the rigid back. The Kernig and Brudzinski signs are inconstant. The superficial reflexes, the abdominals and cremasterics, are either sluggish or absent. The deep tendon reflexes early are often exaggerated, but as the illness progresses and nerve cell destruction occurs, the reflexes become sluggish and finally disappear. The significant reflex findings are: first, a change in the character of the reflexes between examinations, second, an inequality of corresponding reflexes.

The spinal fluid is usually under increased pressure and is clear or slightly hazy, cell count around 250 per c. mm., may range from 10 to 1000 lymphocytes and mononuclears, although at times early in the disease polymorphonuclear predominate temporarily.

Of the paralytic stage, distinguishing features are weakness and flaccid paralysis with diminution or loss of corresponding reflexes. Paralysis may be limited to one muscle group or to the muscles of one extremity, or widespread weakness of varying muscle groups; or there may be extensive and severe and more complete paralysis of most of the muscles of the body. Paralysis may extend over

a period of days with eventual involvement of the muscles of respiration.

Bulbar and encephalic poliomyelitis, a form in which the major seat of infection is in the brain and medulla, is less frequent than the spinal type. The prodromal symptoms are frequently of very short duration and may be absent, temperature usually 104 to 105° , a greater degree of prostration, extreme irritability and at times somnolence or stupor. Neck and back rigidity may be only slight, at times absent. The spinal fluid cell count between 10 and 50, with a predominance of lymphocytes.

Accurate diagnosis of acute anterior poliomyelitis depends on a complete history, a careful examination, and a lumbar puncture. Examination cannot be cursory, it must be deliberate. A neuromuscular examination must be performed. If any or all of the three common signs—stiff neck, rigid spine, ataxic tremor—can be demonstrated, a lumbar puncture should be done without delay.

The examination of the spinal fluid is reliable confirmation of the diagnosis before paralysis appears.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

TREATMENT OF GONORRHEA IN THE MALE WITH SULFATHIAZOLE

WE need an evaluation of the sulfonamides usefulness in gonorrhea. Here¹ it is.

Sulfathiazole has been administered to 31 patients with gonorrhea, both private and clinic, mainly acute, anterior urethritis; 24 cases had previously received sulfanilamide from three to 108 days with no effect. Seven cases have received sulfathiazole only. In the majority of instances the urethral discharge ceased in one to three days, the longest time being seven days, and the urine cleared (no shreds) in one to 17 days.

On entrance, two urethral smears are made, and both stained by the Gram method. One is examined for Gram-negative intracellular organisms, and the other kept for future reference. When the organisms are found, a two-glass test is made. If the second glass is clear, or clears with acid, a warm acriflavine solution of 1-4000 didution is used to irrigate the anterior urethra.

Then sulfathiazole gram 1 every 6 hours day and night for the first 2 days; gram $\frac{1}{2}$ every 4 hours day and night for the third and fourth days. From then on gram $\frac{1}{2}$ is given every six hours day and night; patients are given daily irrigations in the beginning. After 5 or 6 acriflavine irrigations, potassium permanganate is substituted for irriga-

¹ J. G. Strohm *et al*, Portland, Ore., in *Northwest Med.*, June.

tion twice weekly until ready for the test of cure.

Sulfathiazole is discontinued and the test of cure begun when both glasses are clear and free of shreds. However, if one or two shreds are found in the urine after the patient has received an adequate total dosage of the drug and sufficient irrigations, the shreds are stained by the Gram method. If no organisms are found and very few pus cells, it is safe to begin the test of cure. On the other hand if Gram-negative intracellular diplococci are present, as is frequently the case, the drug and the mild irrigations are resumed. So far, the average total dosage is 35 to 50 grams of sulfathiazole.

In the test of cure the anterior urethra is irrigated with silver nitrate, 1-10,000, and the patient given a slide to collect any discharge. When no reaction occurs, and the urine remains clear, a 1-8000 silver nitrate irrigation is given at the next visit with the same instructions; similarly, this is followed by a 1-6000 silver nitrate irrigation. Providing the urine remains clear and no discharge is present, the prostate is then massaged and the fluid examined microscopically for the number of pus cells. This is followed by a deep urethral irrigation of silver nitrate or permanganate. When pus cells are found, the prostate is massaged bi-weekly, followed by deep urethral irrigation until no pus cells are present. It is then time to pass sounds. Should no reaction occur one to four days after sounding, the patient is discharged as cured, and instructed to return in one month for a check on the urine.

The clear urine (which shows no shreds) provides a safe criterion for discontinuing the drug and beginning the test of cure. To date, we have had no case, complicated or uncomplicated, which has failed to respond in a short time to sulfathiazole.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

DONT' LOCK THE STABLE DOOR AFTER THE HORSE IS STOLEN

SOMETIMES people will see with their eyes and hear with their ears and understand with their minds the numerous changes which are taking place all about them, and yet conduct themselves as though it were not so. The medical world is much inclined that way. The old saying that, "If it was good enough for Paul and Silas it is good enough for me" concerns itself, some people think, with only the moral issues. Those of us who operate hospitals are sitting serenely by and are failing to appreciate the changes which are taking place so rapidly. It will be too late to do anything about reorganization, rearrangement and reestablishment of a new fee system at the end of a year when

salaries, supplies, rents and labor have already been advancing for a year.

The food cost has gone up enormously. We should look around for foods grown locally, perhaps, or at least for foods which are plentiful, and use them rather than the foods which are so high. It would be well, also, to consider serving foods in the wards different from those in the private rooms.

Cooking utensils have increased in price, especially those made of aluminum or part aluminum. We are told that when the present supply of aluminum cooking vessels are sold from the retail stores we shall not be able to get any more. It would seem wise, therefore, for the dietitians and business managers to have a conference and purchase such aluminum ware as is necessary.

Little can be done about the cost of labor and material for repairs. No hospital can compete with the United States Treasury and no one would expect labor to work for a penny less per hour than its government sets as a standard. It would be simplicity personified for the hospitals to consider that they can do anything about these conditions. What the hospitals can and should do is to hire as little labor as possible during this period of inflation and make as few repairs as are practicable. Salaries of a necessity must go up for the same reason that labor cost has gone up. Why would one expect a nurse to remain in the employment of a hospital with two weeks' vacation in a year and only a half a day on Sunday off when the government would give her a considerable raise in salary and perhaps one to one-and-a-half days off a week, as well as a month's vacation in the summer time?

Of course it should be admitted that this is a temporary condition, but it is hard to convince the younger generation that it is not going to be a permanent strawberry festival. When the Government's Treasury becomes flat, which it is bound to do very soon after the war, most of these people who have been flocking to government service will be promptly and flatly dropped without any argument or ceremony. They will then rush back for their civilian jobs which will be either filled by the far-sighted employees or by those who have been rejected for one reason or another by the Government, but this is another story. The fact remains that at present salaries are rising and we must provide temporary remedies for temporary conditions.

There is only one way possible to remedy the situation as far as the hospitals are concerned and that is strict economy and increased hospital charges. It is imperative that this be done; not tomorrow but today. The red flag is flying in the face of all hospital books. It will flourish in red ink by December 31st unless immediate steps are taken to remedy the situation.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

PLYLEPHLEBITIS

PLYLEPHLEBITIS is derived from the Greek and means inflammation of the gate or portal vein through which the blood from the intestinal tract, loaded with the products of digestion, is shunted to the liver for essential glandular metabolic change before restored to the general circulation. The condition is important, for it is a secondary complication of infection which originates primarily somewhere in the intestinal tract. Although the pancreas, the spleen, the stomach, the small intestine, the colon and the rectum may be primary sites the most common source of infection is the appendix. And this is the reason why, except in the tropics where amebic infection is apt to be endemic, suppurative appendicitis is probably the most common cause of pyogenic liver abscess.

From the contaminated blood transmitted by it the portal vein itself becomes directly infected so that there may be suppuration within the vein wall. Emboli, from septic thrombi, may be spread by the blood stream throughout the liver. The resulting condition is characterized by small miliary pyogenic abscesses which tend to form in clusters about the portal radicals. Differing from this, multiple pyogenic abscesses in the liver which develop about the intrahepatic bile ducts come from infection which has ascended through the ducts from suppuration within the gallbladder. And in contradistinction to both these, amebic abscess of the liver, which may or may not have been preceded by dysentery, is usually single.

Symptoms of pylephlebitis may appear within three or four days of the onset of appendicitis or may not come for ten days or more. Fever, total and differential leucocytosis, chills, pain and tenderness in the upper abdomen in a patient who is not doing well after appendectomy make one suspect the condition. It has to be differentiated by cystoscopic and x-ray study from nephritic abscess, from subphrenic abscess and from suppuration within the chest. The right diaphragm is high and fixed. On deep pressure there is tenderness over the liver which may or may not be grossly enlarged. Mild jaundice, developing after the onset of appendicitis, makes the prognosis extremely grave. The writer has never seen recovery in a case of suppurative appendicitis with jaundice.

Five per cent of the deaths from appendicitis are from pylephlebitis. The complication is usually fatal, the mortality rate being about ninety-five per cent.

Treatment, to be effective, must be preventive. Cases of appendicitis should be operated upon

early so that all the infection may be removed with the appendix. After the appendix has perforated and peritonitis has begun, or an abscess has formed, this is no longer possible. If a pyogenic abscess of the liver is large enough to be identified preoperatively it should be drained. When there are miliary abscesses surgical treatment is obviously futile. When suggestive symptoms begin before pylephlebitis develops chemotherapy should be given. The early use of the sulfanilamide group of drugs when freely given has been a godsend in combatting blood stream infection.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

ESTROGENS IN ATROPHIC RHINITIS

IN YEARS gone by atrophic rhinitis was the enigma of the rhinopharyngologist. The various operations designed for its alleviation were only temporarily beneficial and in the end the condition was usually made worse. The unfortunate ones who suffered with this condition were obnoxious to their friends and families and in some instances were barred from vocations of their choice because of their halitosis.

Estrogens were first begun in 1937 and have been used extensively since that time. They have been used locally in the nose as a spray and also subcutaneously and intramuscularly.

In my use of an estrogen, good results have been obtained only when it was used in the nose as a spray. The nares are first washed with normal saline and all the crusts are removed. Then the estrogen spray is used in each nostril. This procedure is carried out three times a day, and may be done at home. It is continued until there is improvement and then the number of washings is gradually reduced. The spray must be continued after the fetor and crusts have gone, but must not be kept up indiscriminately and indefinitely. In spite of the fact that some observers report no change microscopically there is in some instances a gross hypertrophy. Indeed in one case, a boy of fifteen, who continued the estrogen several months while away from the doctor's observation, there was gross hypertrophy and hyperplasia so extensive as to almost cause obstruction. This relationship between the nose and the reproductive organs has been recognized since antiquity, but the modus operandi is not yet clearly understood. Why should this exuberance occur? Does sex or age play any part in it?

The patients seen in private practice with atrophic rhinitis came, most of them, because of repeated small epistaxes; a few because family or friends had told them of the fetor. The remainder had their cases diagnosed during routine examina-

tion, or while in search of the cause of some other condition.

The drug I used was estrogenic hormone—2,000 units per c.c. with equal parts of light oil—and the method of application was by spray. The amount used was 1 c.c. three times a day. All of my patients who had primary atrophic rhinitis were helped. Those not benefited were some clinic patients who were indifferent and non-coöperative, or had syphilis or other chronic, debilitating disease.

Many general men have to treat their condition and should be able to do so entirely satisfactorily with this single remedy:

Estrogenic Hormone

2,000 U. per c.c.

(Reed & Carnick)

Light Oil qs. ad.

20 c.c.

40 c.c.

Sig: Spray nose q.d. as directed.

In my experience this line of treatment offers more than anything thus far suggested for these social outcasts. If taken in time and pursued wisely with the patient returning regularly for periodic checkups most of these people will be relieved.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

STATE PUBLIC HEALTH AND THE MERIT SYSTEM

HEALTH work in the State takes two important steps—a step toward efficiency and a step away from politics. These two simultaneous steps are the result of the Merit System soon to be inaugurated in N. C. The Merit System is similar to the Federal Civil Service. It means that the personnel of the Health Departments must stand an examination as to their qualifications.

"To comply with the Social Security Law as amended on August 10, 1939, as applicable to Title V, it has become necessary for the State of North Carolina to adopt a Merit System for the selection of personnel. Under rules and regulations adopted by the Children's Bureau, who are responsible for the administration of Title V of the Social Security Act, they require the extension of this Merit System principle to local health unit employees. By rule and regulation the U. S. Public Health Service has also required the States receiving Title VI and Venereal Disease funds to adopt the Merit System principle for personnel administration. Pursuant to these requirements the 1941 session of the North Carolina General Assembly passed a law entitled 'An Act to Create a Merit System Council for Certain Departments and Agencies of the State of North Carolina.' This is coded as Chapter 378, Public Laws of North Carolina, 1941."

The Attorney General's ruling with regard to

this law passed by the General Assembly is that the act includes all local health unit personnel, as well as employees of the State Board of Health, regardless of the source of funds from which their pay is derived. The Council created under this act and appointed by the Governor has adopted rules and regulations as authorized, and appointed a Merit System Supervisor, who is Dr. Frank T. DeVwyer, Associate Professor of Economics in Duke University.

In approving the Merit System the State Health officer takes another progressive step. It is our belief that the public health workers throughout the State are in sympathy with the Merit System, realizing that the system must be in the interest of the worker no less than the public.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

PROLONGED RETENTION OF A FOREIGN BODY IN THE CRYSTALLINE LENS

DURING the present month, within one week, the writer in the course of an examination of the eyes of two persons discovered a foreign body in the lens of the left eye of each individual. The findings and report in each case follow.

Case 1—White woman, aged 33, hosiery mill worker whose occupation required prolonged use of the eyes for fine detail, only complaint ocular fatigue of moderate degree and moderate dimness of vision both eyes. She had worn glasses for 10 years, all previous examinations by an optometrist and therefore had never had an examination under a cycloplegic. Her general physical appearance was excellent, general health and past history good. When questioned in regard to a recent or remote injury or disease to either eye her reply was in the negative except she recalled when 11 years of age, she and several other children had found a RR detonating cap and succeeded in exploding it by striking it with a rock. She recalled that something struck the left eye cut caused no special pain and nothing subsequently except the eye was slightly bloodshot for a few days following the injury and full recovery followed. The services of a physician were not employed and the incident was forgotten.

Precycloplegic examination showed vision right eye 20/40, left 20/40 plus, with all external tissues of both globes clear. A small iridodialysis was present at the nasal limbus at 10 o'clock which suggested the entrance of a foreign body. The pupils, media and fundi showed nothing pathologic except in the area of the nasal pole of the lens of the left eye, where there was a slight grayish haze behind the pupillary margin. Tension of both eyes was normal by palpation.

Under cycloplegic examination the pupils dilat-

ed equally and round and there was no intra-ocular lesion in either eye except the hazy area in the left eye as described. This now showed an opacity in the nasal pole of the lens and a brilliant sheen as of some thin flat metallic foreign body presenting on the anterior surface of the lens opacity. The right eye presented a lowgrade compound myopic astigmatism correctible to 20/15 and the left eye 0.75 diopter of hyperopic astigmatism correctible to 20/25.

The patient was apprized of the presence of the foreign body in the left eye and advised to allow of no interference with it, but, should either eye become inflamed or painful or there be any rapid change in visual function, to seek medical advice without delay.

Case 2—White man, aged 38, structural steel worker, gave a history of an injury to his left eye 6 years ago from a flying particle of some nature. At the time of the injury was seen and treated by a physician for a brief period with good recovery and no subsequent trouble.

External examination disclosed a small scar at the limbus at 9 o'clock suggesting the site of entrance of a foreign body, a gray haze at the nasal edge of the pupil and 3 pinpoint gray dots in the substance of the center of the lens. The pupil was of normal size, shape and reaction and neither eye presented any other evidence of ocular disease. Tension by palpation of each eye was normal, vision each eye 20/20 plus. There was no complaint with reference to either eye other than from soon after the injury to the present time, the patient has been conscious of a slight haze in the nasal area of the left pupil and desired to know its probable cause. Under mydriasis refraction was found to be free from error, and either eye diseased. This now presented an opacity in the nasal pole of the lens and the appearance of the lesion suggested an encysted foreign body. Advice was given him as in case 1.

Comment—Experience teaches that the presence of an intraocular foreign body is fraught with immediate and grave danger to the eye harboring it, and to a lesser extent to the fellow eye, whether or not the patient be promptly treated. Also that there is danger to both eyes, even after many years.

The degree of danger varies with the size, shape and chemical character of the foreign body—copper, lead and iron being poorly borne—and whether or not infection was introduced with the foreign body. Steel is better tolerated, particularly if sterile upon entrance. As to location of the foreign body and its point of entrance. A foreign body passing through the ciliary area presages grave results and if lodged in any part of the uveal tract the danger is magnified. If lodged in the lens

the prognosis is a great deal better as the lens, an epithelial structure, can better withstand the presence of a foreign body more particularly if the wound in its capsule promptly heals. The lens may sooner or later become totally cataractous without other intraocular trouble. Then it, with the foreign body, can be extracted.

In these cases the true character of the foreign bodies is not known but the fact that they have been so well tolerated in the eye—in case 1 for 22 years and in case 2 for 6—is due to the fact that they are in the lens, were sterile upon entrance, in the first case probably tin or stone, in the second steel, are of small dimension and were rapidly incysted in the lens substance with prompt healing of the lens capsule.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

INDICATIONS FOR DISCONTINUANCE OF ARTIFICIAL PNEUMOTHORAX

WHEN to cease giving air-refills to tuberculous patients is a problem concerning which there has been much discussion. It is generally agreed among men who have had large experience in the use of this type of treatment that no hard-and-fast rules can be followed in deciding how long to continue the treatment, since the decision may depend on the extent and type of the disease, the effect of the collapse on the toxemia, whether or not the sputum is rendered negative for tubercle bacilli by the collapse, the occurrence of exacerbations of the disease or of complications during the treatment, the social and economic factors affecting the individual patient; also the mental reaction of the patient to discontinuing the collapse treatment. The institution of the treatment merely for its psychological effect is a mistake which is occasionally made.

An article by J. N. Hayes in a recent issue of *Diseases of the Chest* covers the subject rather completely.

The author first tabulates the degrees of effectiveness of the treatment as follows: (1) the treatment is a *failure* when no pleural space can be found; (2) it is *non-effective* when a pocket, usually at the base, is formed, but with no effect on the lesion or symptoms; (3) it is *partially effective* when a fairly good collapse can be obtained with some result in symptomatic improvement, but adhesions prevent closure of a cavity; (4) the treatment is *effective* when cavities are closed with control of the lesion, and the sputum rendered negative for bacilli. A non-effective collapse is usually recognized within a few weeks, and, as a rule, it should be discontinued at once. One partially effective requires more observation. The

apex may be adherent, or wide bands of adhesions may extend to the chest wall from the area of cavitation preventing the cavity from closing; here pneumolysis or a temporary phrenic nerve interruption may be of great benefit. With an additional involvement of the contralateral lung sound judgment is required in deciding whether to substitute, say, thoracoplasty. The author says that as long as the cavity is closing, however slowly, and the symptoms of cough and expectoration improving, it is better to give the pneumothorax a chance. Slow-closing cavities sometimes are reopened by reëxpansion of the lung particularly in cases in which the upper third has become extensively adherent to the chest wall and mediastinum. On the whole, partially effective collapse by pneumothorax should be abandoned for some other form of collapse therapy within a few months at most. The time required for healing by effective artificial pneumothorax is for minimal disease, one year; for moderately advanced disease, two to three years; for far-advanced disease, four or five years.

The most satisfactory pneumothorax is one which can be made effective quickly, and one which is mainly over the principal seat of disease—the so-called selective pneumothorax. This type of collapse can be discontinued earlier than one which has been mechanically less effective. In many cases of partially effective collapse relapse comes as the lung reëxpands. These are usually cases of old disease with cavitation in the apex and adhesions to the upper chest wall. Adhesions may prevent closure of the cavity by even a 90-per cent collapse; and, although it is impossible to obtain such a complete collapse by even an extensive thoracoplasty, this operation should be seriously considered as it will offer fewer complications once the postoperative period has been passed.

Repeated pleural shock is an indication for the cessation of pneumothorax treatment as is bronchopleural fistula. The latter is almost invariably the indication for early thoracoplasty, but pleurocutaneous fistula is not often a reason for stopping the treatment. Some advise thoracoplasty in most cases of tuberculous empyema without bronchopleural fistula, occurring in the course of collapse treatment. The author prefers oleothorax as a substitute for pneumothorax if the lung is so thoroughly collapsed that one could not expect the chest wall after thoracoplasty to fall-in sufficiently to meet the lung. In such cases, after thoracoplasty, a pleural pocket containing pus might persist.

Moderately advanced and far-advanced lesions that appear to be healed after six months to two years of treatment have been practically all of an exudative or mixed exudative type, with

soft-walled cavities, but one should be careful and not let this type reëxpand too soon. Fibrous thick-walled cavities may remain unhealed after five years of collapse, with walls in contact all the time. When a lung containing tuberculous pneumonia is collapsed cavities tend to enlarge at first and new ones to develop. Such cases require prolonged collapse, sometimes necessitating permanent pneumothorax, or a thoracoplasty after several years collapse.

Occurrence of a serous pleural effusion is not necessarily a reason for stopping pneumothorax. Serous pleural effusions continuing over a long period of time cause an obliterative pleurisy in about 20 per cent of cases. The author states that in 18.7 per cent the collapse was improved and the patient better after a serous effusion.

Failure of the lung to expand after voluntary cessation of pneumothorax the author says is from bronchial stenosis due to bronchial tuberculosis, or from fibrous thickening of the visceral pleura. If the refills are discontinued, the mediastinum is pulled over to the collapsed side and the remaining space usually fills with fluid. A displaced heart and torsion on the blood vessels in such cases may lead to circulatory embarrassment, and occasionally the fluid may become purulent. In many such cases permanent pneumothorax should be the method of choice.

Summarizing: (1) After effective collapse in minimal cases of one year, in moderately advanced cases three years, and in far-advanced cases four to five years; (2) review of the x-ray films and course of the disease previous to pneumothorax to determine whether minimum or maximum time is needed; (3) whether active intestinal or laryngeal tuberculosis is present; (4) whether pleural or pulmonary complications have occurred during treatment, and the present condition of the patient; (5) an estimation of the resistance of the patient to the disease; (6) the original size of cavities and the extent of the disease; (7) the series of sedimentation rates, the leucocyte count and the proportion of immature cells which have been normal for sometime. If, during reëxpansion, there is low-grade fever and increase of purulent sputum, the collapse should be reinstituted and maintained longer.

This discussion is probably as definite as it can be made. No hard-and-fast rules can be stated. The decision is left with the individual physician, and the physician must have a thorough knowledge of each patient and his or her disease before deciding what is best.

USEFULNESS OF SULFADIAZINE

(M. Finland *et al*, in *J. A. M. A.*, June 14th)

Not only is the drug an effective treatment agent for the infections named; also it is much less toxic than sulfathiazole and salapyridine. In the treatment of pneu-

mococcic, staphylococcic and streptococcic pneumonias, acute infections of the upper part of the respiratory tract, erysipelas, acute infections of the urinary tract, acute gonorrheal arthritis and meningitis sulfadiazine is highly effective. Their findings are based on the treatment of 446 patients.

DENTISTRY

J. H. GUION, D. D. S., *Editor*, Charlotte, N. C.

ABOUT CROOKED TEETH

EVERY doctor who has any part in the health care of children has problems about crooked teeth. A sensible, middle-of-the-road statement of the case¹ is here given in brief.

In mouth-breathing or finger-sucking the support of the tongue and lips is diminished and that of the cheeks increased and the pressure of the fingers or the abnormal position of the tongue tends to push the lower teeth backward and the upper front teeth forward and to press the sides of the dental arches inward.

Not all children who suck their thumbs or fingers or who have enlarged adenoids have crooked teeth. The harm resulting from the habit should be weighed against the harm that may result from attempts to correct it.

Some report success from the use of an appliance which hurts the thumb when it is placed in the mouth. Stopping of thumb-sucking can result in but little benefit to the teeth if the patient has ceased to breathe through the nose. Orthodontic treatment is the only hope of establishing normal function in the mouth and these results will probably not be permanent if the postnasal space is blocked off.

A child who has a low fever, eats poorly, breathes badly and fails to gain either in general or as regards the dental structures should be under the care of a physician.

An abnormal frenum is not nearly so common as was formerly thought. Removal of the frenum does no good; and it may leave scar tissue that will prevent the normal movement of the teeth to close the space between the upper central incisors. It is sometimes necessary to move these teeth together by orthodontic means.

A ration containing all the essential vitamins, minerals and other substances for the growth of bones and teeth is basic. Many patients who have had every attention to the mechanical and nutritional conditions develop malocclusion of varying severity. Constitutional dyscrasia as a cause of early pathological conditions of the teeth, irregularities of placement, malocclusions or even absence of tooth buds may be considered under: 1) hereditary ectodermal dysplasia—lack of tooth development, missing teeth or irregularities of arrange-

ment; 2) mongolism—teeth may be tardy, structurally defective, or abnormally placed; 3) in syphilis, and 4) in hypothyroid—almost any type of tooth anomaly.

Often parents of such children suffer from similar defects. No trustworthy evidence has been presented to show that any benefit results from the administration of calcium and phosphorus.

Malocclusion grows worse as time goes on. A pronounced disharmony in the relation of the deciduous teeth is almost certain to be followed by a disturbance in the permanent teeth. There is but little dental development after the child reaches 13 or 14 years of age, hence the greatest benefits result from early recognition and prompt corrective treatment. There are some conditions that should be treated in early childhood.

DERMATOLOGY

J. LAMAR CALLOWAY, M.D., *Editor*, Durham, N. C.

MANAGEMENT OF ACNE VULGARIS

ALTHOUGH acne vulgaris is as a rule a disease of adolescence, it frequently involves people in other age groups and often persists throughout adolescence and into the third decade. From the outset, it should be emphasized that the control of acne necessitates much careful treatment and cannot be left to spontaneous cure such as is frequently the case. When these people are untreated, scars develop which are often quite disfiguring and result in complexion inferiority complexes.

Acne vulgaris is an affection of the pilo-sebaceous system, usually associated with seborrheic eczema of the scalp involving many etiological factors including heredity, food allergies, drug allergies, endocrine disturbances, primary and secondary infections. Accordingly, all of these factors have to be taken into account. A definite regimen for their management will be outlined below.

1. The diet should be low in carbohydrates and in excess fat.
2. Chocolate and nuts should be specifically avoided and in some cases oranges and tomatoes.
3. Plain table salt should be used instead of iodized table salt.
4. No medications containing bromides or iodides should be taken.
5. The face should be bathed at least three times daily with a good soap—using hot then cold water. When pustules are prominent, wash cloths should not be used.
6. Under no condition should the patient pick, squeeze, or press pimples or blackheads. This spreads the infection and increases the scarring.
7. The scalp should be shampooed at least

¹ Walter Hyde, Minneapolis, in *Jl-Lancet*, May.

- once weekly with tincture of green soap.
8. Creams about the face should be avoided.
 9. The patient should get at least eight hours' sleep and as much outdoor exercise and sunshine as possible.
 10. Regular bowel elimination without laxatives is very important.
 11. Lotio alba N. F. or a similar preparation should be applied locally at night and left on overnight.
 12. X-ray therapy (a very valuable adjunct), vaccines, endocrine preparations etc. should be left to the discretion of a dermatologist.

This discussion is no attempt to cover the many theories as to etiology, nor does it attempt in any way to outline or judge other therapeutic measures. An outline of treatment is suggested for general use which will have to be modified in many instances.

While most patients with acne can be fairly well managed on a regimen such as has been outlined, no case should be allowed to go on to a stage of inevitable scarring while one is waiting for spontaneous cure.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

THINK OF SYPHILIS: THEN TAKE APPROPRIATE ACTION

ONE of the greatest of our surgeons made much of his reputation by giving mercury and potassium iodide on suspicion in many of his obscure cases. He did not have the advantage of the Wassermann test. We have. And syphilis is a lot more common now.

Here's an abstract¹ that should do us all good:

No matter how long one is in practice, how careful he is in his examination, how well or how long he has known the families he practices among, the time will arrive when he will be startled to get a positive serological report on some case that is puzzling him.

Most hospitals today have a standing order for a serological test on every patient. In private practice—we know the family, we have known them all for years, we may have delivered the children, we just know this illness could not be syphilis—and syphilis does not come into our minds.

The general practitioner must be on the lookout for congenital syphilis, he must detect the disease prenatally, must pick up the cases with primary lesions—and give adequate treatment. Many with primary lesions do not consult a physician. The physician must keep in mind the many and varied aspects of secondary syphilis so that he can make

the diagnosis quickly—and give adequate treatment.

An unmarried man of 42 had fainting spells, stumbled and walked unsteadily. Twenty years before a doctor used argyrol for a sore throat for 30 days without result; another physician for another week made local applications—worse; a third took a blood test and gave him six intravenous injections. He felt perfectly well for 20 years. We found a positive blood and positive spinal fluid. Shortly afterward, he had to be sent to a psychopathic hospital with general paresis.

In my early practice, I saw a woman of 63 with large open granulating areas of both knees, extending below the knees. The physician who had been caring for her for two months had given up the case because she would not go to the hospital for skin grafts. I had never seen anything like it; finally the idea of syphilis dawned upon me, and appropriate treatment healed the lesions in a brief time.

Yet, a few years later when a woman of 60 came to me because of a lesion in the knee region, I first thought of actinomycosis. As I was preparing to look for yellow granules, the thought came to take some blood for a Wassermann. I knew her two boys who were in college. They were fine healthy fellows, and the family was well known and respected. However, the serologic test was positive and the treatment yielded good results.

A few years later, a benevolent deacon, the father of two healthy children, the grandfather of two husky boys; for over a year he had had four small ulcers on the upper part of his leg. Just above was a dilated vein. He had been under the care of two physicians previously. The ulcers had not made any progress. I cleaned the ulcers and cross-strapped them with adhesive. At the end of two weeks, they were almost healed. At the end of four weeks, the ulcers were as bad as ever! Bad vein? A Wassermann, first. It was positive. Under syphilitic treatment the ulcers healed and they remained healed. He still has his dilated vein.

A boy of 12, right knee had been getting stiff for the past two weeks. He had not injured it; unable to go to school because of a knee stiff, rather than sore and painful. The joint was full of fluid, and he had Hutchinson's teeth. Wassermann was positive. Father, mother, two sisters and a brother, all well except that the family all had positive Wassermanns; and that two months before a mop had fallen, and the handle had hit one of the sisters over the tibia and she had a large, painless swelling over this bone. Six people who had been attended by several physicians—four people with congenital syphilis which had gone undiagnosed until the youngest was 12 years old.

A man, 23, was brought to my office by his

¹ J. F. Casey, Boston, in *Miss. Valley Med. J.*, May.

mother. For two years regurgitation, indigestion, pain in the abdomen. He was miserable, undernourished and anemic. He had been under the care of a physician who had had a surgical consultant; later under the care of a stomach specialist for a year; many gastrointestinal x-rays by an excellent x-ray specialist. The treatment I gave the first time was without avail so I went over him again. He had unequal pupils and his knee jerks wouldn't function. Two positive Wassermanns ended the diagnostic search.

It is embarrassing to the physician in court for his patient who has suffered injuries in an auto accident and is still disabled when on cross-examination a lawyer asks, "Doctor, why do you think this wound has taken so long to heal?", or "Doctor, why do you think these brain symptoms still persist?" And after you answer, he again queries, "Doctor, did you take a Wassermann test?"

A widow of 35 suffered a head injury in an automobile accident. X-ray showed a fracture of the skull although, except for a mild concussion, she showed no sign of brain injury. Not long afterward she began to lose hearing in one ear, later vision in one eye; for over a year she was under medical care, and then was sent to an eye and ear specialist. A bit later she had such a tremor she dropped everything. I was sure she had an over-acting thyroid due to physical or psychic trauma. The metabolism was normal. A positive Wassermann; adequate treatment; quick improvement of eye and ear disturbance; quick and quiet settlement out of court completed the case.

The Man With the Iritis, The Child With Epilepsy, The Woman Whose Foot Would Not Heal After a Minor Injury, The Man With the Brain Tumor, The Twins With the Sabre Shins, The Lady With the Peculiar Lung Lesion, The Man With the Cardiac Lesion—these are not gone into.

Are these cases of late syphilis common? They are.

Who sees them? You do. I do.

Who misses the diagnosis? We all do.

How shall we avoid our error? First we must raise what Stokes calls "a low index of suspicion;" second, Take a Wassermann.

CARE OF THE PREMATURE INFANT

Most doctors need to amplify and brush up their knowledge of what to do, right away, with and for a prematurely-born infant. Read attentively the coming synopsis of a first-class dealing¹ with this phase of practice; and maybe you will be rewarded by having the next coterie of quintuplets you welcome into a difficult world all sur-

vive, and you get to endorse baby foods, powders, diapers and so on.

The care of the premature infant is embraced in four words: keep warm, protect, feed. The temperature of those born before their time tends for some time to parallel that of their surroundings. Before the cord is severed the premature infant should be placed in a heated blanket. As soon as the mucus has been removed from the mouth and upper respiratory passages and the cord cut and dressed, it should be placed in a heated basket or incubator bed.

A small clothes-basket lined with cotton quilting and set into a box or bassinet, leaving an adequate space between the two for hot-water bottles, makes a serviceable heated bed. Remember that these infants are easily burned, and such burns are usually fatal. Put hot-water bottles *around* the bed rather than in it.

A combination pack of cotton and gauze so arranged as to envelop the infant completely, except for the face and genito-anal regions, answers well for clothing. To the genital region and anus small squares of cotton covered with gauze may be applied as diapers and changed with less disturbance.

The room temperature should be maintained between 75 and 80°; humidity, about 65 per cent. The t. inside the heated bed should be between 90 and 95°—the amount necessary to maintain a normal body temperature. Overheating will tend toward dehydration and may be as dangerous as chilling.

Upper- and lower-respiratory infections, especially otitis media and pneumonia, are the most frequent causes of death in these infants. Mucus and secretions in the air passages must be removed before the infant takes his first breath by gentle wiping of the nose and mouth with a soft pledget of gauze, or by careful aspiration with a catheter, as soon as the head is born. The face, body and cord should be protected from all contact with feces and other infected matter. After the body is born, the infant should be held in a dependent position to allow the mucus and other secretions in the respiratory passages to escape. The eyes should at this time be treated with silver nitrate.

A competent nurse must be prepared to meet all emergencies, as cyanosis and asphyxia. Prevent overfeeding and handling. The less the baby is handled, bathed and polished, the less is the danger of skin and cord infection. It must not be allowed to lie in one position for more than one or two hours.

No one with a cold is to be allowed in the same room, and none but the nurse and doctor in charge should be allowed to handle him, whether in the hospital or in the home. Strict isolation of

¹ C. J. Setthimer, Denver, in *Rocky Mountain Med. J.*, June.

the small premature from the family should be enforced during the critical period.

Premature need relatively more food than do full-term infants and are less well equipped to digest and absorb it. During the first four days of life the inanition loss is attributed to the loss of feces, urine, perspiration, exhaled moisture, emesis, and actual tissue loss. The amount of the loss is more influenced by fluid than food intake. During this period the administration of water or sugar water is in order. The use of albumin water or milk may result in making allergic many babies whose intestinal tracts are permeable to undigested proteins.

It is wise to withhold all food and fluid until the respiratory and circulatory functions are well established, from four to eight hours for the more vigorous infants, to 12 or more for the weaker and, especially, those with a considerable amount of mucus. Then offer every two hours as much as he will take. The weaker ones should be fed with a dropper. Gavage for those too weak to swallow, and only by a nurse well trained. Gavage is dangerous, not so much because of the possibility of introducing the catheter into the trachea by mistake, as to the tendency to overload the stomach with embarrassment of the cardio-respiratory functions, or of subsequent regurgitation and aspiration of the stomach contents. The premature infant unable to swallow should receive, parenterally, normal saline or Ringer's solution, rather than fluids by gavage.

The first three days the minimum food and fluid is the amount necessary to maintain a stationary weight; one-seventh of the body weight in fluids, and human milk to furnish 30 calories per pound of body weight are required to maintain life. The additional amount for growth is determined by the infant's weight curve. Most healthy infants will take enough food and fluids to meet these requirements.

Human milk is essential to a low mortality in premature infants. An attempt should be made to establish and maintain the mother's milk. In its absence milk from a wet nurse should be procured.

OBSTETRICS

HENRY J. LANGSTON, M. D., *Editor*, Danville, Va.

A SKIN TEST FOR THE DIAGNOSIS OF PREGNANCY

A GOOD many attempts have been made to work out such a test. Here we have described¹ a test which holds out the greatest promise.

Reasoning that colostrum must contain the proteins produced by the breast in early pregnancy,

¹ F. H. Falls, et al. Chicago, in *Trans. Amer. Assn. Obs., Gynec. & Abdom. Surgs.*, 1940.

it was decided to use colostrum in various dilutions intradermally on pregnant and non-pregnant women to determine whether they reacted alike or differently. The pregnant women gave a faint response or no reaction to the injections, while non-pregnant individuals reacted vigorously. As the number of cases injected increased the high percentage of correct diagnoses made by the test became quite significant.

From the breasts of primiparous pregnant women colostrum is expressed manually into a sterile glass container after cleansing the nipple and areola with ether. Colostrum is most easily obtained at about the twenty-eighth week of pregnancy and to it is added an equal amount of sterile normal saline solution. To 10 c.c. of this mixture 1/10 c.c. of 1-100 merthiolate is added as a preservative and it is kept in the icebox.

The flexor surface of the forearm is sponged lightly with a piece of cotton saturated with ether. A wheal is formed by injecting exactly 1/50 c.c. of the diluted colostrum intradermally, using a tuberculin syringe and a 26-gauge needle for the purpose. A second syringe and needle are used to make a wheal of similar size with physiologic salt solution a few inches lower on the arm to serve as a control. The reaction is noted at 10 minutes, 1/2 hour and 1 hour. Readings made at the 1/2 hour usually indicate whether the test is positive or negative.

If the patient is pregnant the colostrum wheal will appear pearly, resembling a fresh mosquito bite, with little or no pinkish areola, and in an hour will show only the needle prick in the center. The control shows nothing more than an elevation of the skin.

On the non-pregnant the wheal tends to remain raised and pearly a few minutes after injection, then to enlarge gradually to two to three times the size originally, without changing color. There then appears a pink to red areola 1 to 2 inches in diameter projecting pseudopods from its periphery. The reaction steadily grows in intensity for an hour and persists for four or five hours. The control injection with physiologic salt solution in these patients gives no increase in the wheal or pigmentation of areola.

Tests were made of 265 women in various stages of pregnancy, toxic as well as nontoxic; and of 358 non-pregnant persons—100 adult males, 45 children below the age of 15, 50 menstruating women, 50 postpartum, and 113 normal non-pregnant women or women with carcinoma, fibroids, ovarian cysts, et cetera. Finally, 50 unknown problem cases were tested to establish the diagnosis.

Of the 265 women known to be pregnant there were five false reactions. In two cases non-preg-

nancy reactions were obtained and later it was shown that a living fetus was in the uterus. One of these later gave a positive pregnancy reaction, in the other there was no opportunity to retest.

In three cases a weak reaction indicated non-pregnancy. However, this reaction persisted for only 45 minutes and had disappeared by the end of the hour. Early in, and toward the end of, pregnancy a slight reddening around the vesicle produced by the injection might be termed a weak or false non-pregnancy reaction, differing from the true in width of areola, depth of color and in the wheal not enlarging. It differs from pregnancy reaction in that there is some color around the wheal. A similar reaction has been seen in the early puerperium. A group of 15 patients was tested during labor and it was seen that the stage of labor made no appreciable difference.

Of the 113 women known to be non-pregnant tested, 45 were out-patients and 68 were in-patients in gynecology, mostly post-operative. Typical non-pregnancy reactions were obtained in all but four patients, in whom typical pregnancy reactions were obtained which would have led to an incorrect diagnosis if the test alone had been relied upon. The four women who gave this reaction were all in the menopause for from five to 17 years; three had advanced carcinomas of the cervix, and the fourth a simple proclitica 17 years after the last menstrual period. The 50 menstruating women all gave non-pregnancy reactions. In the study of 45 children of both sexes, aged 2 to 15, a reaction similar to that of pregnancy was obtained in all to age 10; beyond this age modified non-pregnancy reactions were seen in both boys and girls.

Of 100 males of varying ages—routine medical service patients with cardiac disease, hypertension, blood dyscrasia, et cetera—studied, none gave positive pregnancy reactions, three gave modified non-pregnancy reactions.

Of the 50 two to eight weeks post-delivery, in all but three the reaction was that of non-pregnancy, whether or not the patient was nursing her baby. The three pregnancy reactions were all in women eight weeks postpartum; one was menstruating, the other two admitted exposure, but sufficient time had not elapsed to determine whether or not pregnancy existed.

CONCLUSION

An intradermal injection of a colostrum solution gave no reaction in 98 per cent of pregnant women.

Non-pregnant women reacted to similar injections with the formation of a characteristic wheal and areola in 96 per cent of cases.

Males reacted similarly to non-pregnant females.

Children before puberty reacted similarly to pregnant women.

INSURANCE MEDICINE

H. F. STARR, M.D., *Editor*, Greensboro, N. C.

EFFECT OF ASTHMA ON INSURABILITY

THAT asthma is a symptom, not a disease, is the proper approach to a prognosis as to the effect of asthma upon longevity. It is the cause of the asthma that determines the mortality.

Two things to be determined in each case are:

1. Is the asthma due to an extrinsic cause, an intrinsic cause, or both?
2. Are there associated diseases or impairments which affect the outlook?

Asthma due to extrinsic causes depends upon allergy or sensitiveness to foreign substances, while the intrinsic type is due to some condition present within the patient. The types may be mixed. As it is not practicable to employ skin tests (even if these were as trustworthy as enthusiasts think them to be) in the routine insurance examination we must rely largely upon the history for determining the type.

A history of allergic manifestations in the family is suggestive. On the other hand, certain diseases in the family—e.g., tuberculosis or two or more cases of heart disease—suggest an intrinsic basis. Generally speaking, the earlier the onset and the longer the history of attacks, the more likely it is to be of the extrinsic type. Asthma beginning before age twenty is usually an entirely different thing from that beginning after middle life.

The dates of the attacks, when painstakingly determined, may show a seasonal occurrence, suggesting an extrinsic cause. The occupation and working conditions as well as the home and its surroundings may furnish important clues. A history of eczema, hayfever or other allergic manifestations strongly suggests an allergic origin.

With a history of periods of freedom from attacks, a study of conditions existing at such times determine why attacks *do not* occur may furnish the key, whereas the approach to the problem with the view to finding why the attacks *do* occur has failed. If freedom from attacks for a time followed removal to a new home, or the purchase of a new mattress; if no attacks are suffered when away from home, or following the disposal of a cat or dog, or a change in diet, the implication is obvious.

About one case of asthma out of five is of the intrinsic type which is a much more serious problem. The majority of these cases begin at middle life or beyond. Some of these cases start as typical extrinsic asthma and the condition goes from bad

to worse. Others, after many years of freedom from the extrinsic attacks which began in childhood, develop the intrinsic type after middle life. Colds or bronchitis bring on attacks in some.

Our greatest problem in prognosis is presented by those who have always been in good health and without warning develop severe attacks of asthma at about age 50, with no evidence of allergy. Here the examiner is faced with a problem that calls for exercise of his best abilities. He thinks of emphysema, a new growth, tuberculous hilus glands that have become active, bronchitis due to sundry causes, sinus infection, heart disease and so on. The prognosis is far less favorable than in the extrinsic type.

Asthma associated with a severe chronic vasomotor rhinitis is most unfavorable as to mortality. Preceding the onset of asthma, which is generally sudden and severe, there is usually a history of chronic nasal trouble and in most cases there is sinus disease. The death rate is high and the end comes in an attack of asthma.

A careful physical examination is essential in every case. Some impairments which alone give rise to a moderate increase, when associated with asthma increase the mortality hazard markedly. In a group of asthmatics 20 per cent or more overweight the mortality was 59 per cent in excess of the expected in the experience of the Penn Mutual. Dublin, of the New York Life, reported a mortality one and one-half times the normal in asthmatics ten pounds or more overweight and twice the normal mortality in those 10 pounds or more underweight. Any evidence of cardio-vascular-renal disease adds greatly to the mortality hazard. Many say the better risks in the extrinsic group will show a normal or nearly normal mortality. Insurance evidence is not sufficient on this point because up until the present time it has not been possible to follow a large enough group of purely allergic, uncomplicated cases for a sufficient length of time. We are certain that asthmatics have shown a decided excess in insurance mortality. The mortality is excessive during the early years after examination for insurance but high at all ages, especially between 30 and 50. The more recent the history of the last attack the higher the mortality. Evidence is not clear as to whether mortality varies with the severity of the attacks. Emphysema or bronchitis greatly increases the hazard. Even a moderate departure from the average weight has a significant effect upon mortality.

Finally, the causes of death responsible for the excessive mortality of asthmatics give us valuable indications as to the line of thought we should follow in collecting the evidence for appraising the insurability of the individual. The combined insur-

ance experience indicates that with a history of attacks of asthma within five years of examination, the deaths due to organic heart disease have been $3\frac{1}{4}$ to $2\frac{1}{2}$ times normal, tuberculosis of the lungs $1\frac{3}{4}$ times normal, influenza $2\frac{1}{4}$ times normal, pneumonia $3\frac{1}{2}$ times normal and deaths during attacks of asthma many times normal.

GYNECOLOGY

G. CARLYLE COOKE, M. D., *Editor*, Winston-Salem, N. C.

EMPIRIC VERSUS SPECIFIC TREATMENT

SOON after sulfanilamide made its debut, I was called to see a white twelve-year-old girl with pain and tenderness in the lower abdomen, temperature of 103, blood count of 16,000. The pain had begun two days earlier. She was sent to the hospital. Rectal examination showed the pelvic organs fixed in place by adhesions. There was no vaginal discharge and repeated vaginal smears showed no specific organisms. She was put in Fowler's position, ice caps were applied to the abdomen and sulfanilamide was given until 10 milligrams showed in the blood. Symptoms did not abate and temperature ranged between 103 and 104 for a week. She was able to take nourishment and her bowels continued active. With continued severe infection the patient became alarmingly ill. There was no softening nor evidence of a collection of pus for which we could resort to surgical drainage.

As nothing changed the picture and the outcome looked disastrous, the roentgenologist was consulted concerning small doses of x-rays to the pelvis. The roentgenologist stated that this treatment could do no harm. She was immediately started on 100 R over the pelvis and the sulfanilamide was discontinued. After the second dose which was given in twenty-four hours after the first, her temperature dropped to normal, and without further treatment of any kind she progressed to a complete cure and is well and without symptoms at this writing.

Before the advent of sulfapyridine the radiologists were reporting very favorable results from x-ray therapy in pneumonia. Many acute inflammations have been seen to subside following its use, and many conditions have shown as miraculous benefits as from sulfonamides. Although the sulfonamide drugs are supposed to be specific, one wonders if their use is not about as empirical as that of the x-rays. Their possibilities have begun to be every-day stand-bys so much so that, regardless of the nature of the disease, the presence of a high temperature immediately suggests the use of these drugs. Sometimes they fail. Whether or not other remedies which have shown a good result are empirical, when the specifics do fail, we should not forget the possibilities of the other agents.

This excellent discussion was inadvertently omitted from our June issue—

DISCUSSION OF DR. NEBLETT'S PAPER:

DR. M. D. CLAYTON, Statesville: Mr. Chairman, Ladies and Gentlemen: It is a pleasure to discuss Dr. Neblett's paper. In the first place, as you know, he is one of the foremost oculists in our State. Secondly, he activates the highest ideals of the profession. Those of you who know him will readily understand what I mean.

It has been stated that glaucoma is not a disease, yet it is a disease which manifests itself in various ways, each with a different etiological factor and hence, requiring different forms of treatment.

The first thing to do in the approach of any case of glaucoma is to classify the disease. First, there is primary glaucoma, under which we have the uncompensated form, formerly called inflammatory or congestive.

Under the compensated form, we have the acute or chronic, non-inflammatory, glaucoma simplex; and finally under primaries we have juvenile.

It has been stated that the difference between primary and secondary glaucoma is a matter of ignorance, implying that we do not know the cause of secondary glaucoma. Most any physician can diagnose an attack of acute classical glaucoma; hence, it is not necessary to dwell on the symptoms of this type.

Given a case of potential glaucoma, my first procedure is to examine the patient from head to foot in order to evaluate the patient as a whole. Secondly, a careful study of the visual acuity is made. Following this refraction, both manifest and static, is done, which implies the use of a mydriatic. Tension is taken before and after the use of the mydriatic. Following this a careful study of the visual fields, including both form and color, is done. Should there still be a doubt as to the diagnosis, the tension is taken, patient is placed in a dark room and the tension repeated every twenty or thirty minutes for a time. Should the tension increase, glaucoma is quite possible. After these procedures, if one is still in doubt, the patient should be carefully observed from time to time until a satisfactory conclusion is reached. Assuming that a diagnosis of glaucoma is established, inasmuch as 1 per cent of all cases of eye disease is due to glaucoma and as 12 per cent of all cases of absolute blindness result from glaucoma, these cases naturally require the utmost of attention. Such cases should only be entrusted to those who have knowledge, skill, experience, and who are skilled technicians.

The statement has been made that all physicians should be equipped to use the ophthalmoscope. This is an excellent idea, but it requires prolonged training and comparative knowledge to be able to properly evaluate findings in the ocular fundi. Not infrequently I see patients who have emerged from clinics with the statement that the ocular fundi present nothing unusual, yet, after a careful study, findings are revealed which are invaluable to the physician who has the patient under his care.

At this very moment, in our State Capital, the non-medical refractionists are attempting to gain recognition which would give them equal privilege in the care of the eye with the physicians. The implication is evident.

A little knowledge is a dangerous thing;

Drink deep or taste not the Pierian spring.

DR. J. G. JOHNSTON, Charlotte: I'd like to say a few words if I may in order to emphasize some points in Dr. Neblett's favor. I want to say this—we are all likely to be fooled in some cases of glaucoma. I remember when I first began this work I got hold of an old lady that had glaucoma and I never saw anybody do

better. Everything went on as nicely as it could. She just bragged about it. I soon found that it wasn't all such easy plain sailing and I came to the conclusion that the thing you have got to do probably more than any other is the complete diagnosis. Early diagnosis can help save the sight in a great many cases of glaucoma, but if you wait and think this and that little attack is not much, and they get a little worse and a little worse, they go past the safety line and the eye is badly crippled, if not entirely gone. Early diagnosis is the thing that we have got to undertake, particularly in this disease.

One other thing Dr. Clayton spoke of and Dr. Neblett implied also, and that is this non-medical refractionist's job. No later than last Saturday a woman was brought into my office who had been seen before and told that she had beginning cataract, but not to do anything about it, don't have anything done yet, but a short while later on when she couldn't see, to have it operated on. Consequently, she had absolute glaucoma. She couldn't see. Her eyes were entirely lost beyond any hope at all of restoring sight. Thank you.

DR. NEBLETT, closing: I just want to say one or two words. Apropos what these two gentlemen said about this non-medical refractionist— I will just bring this one point to mind—of children of pre-school age and those before the age of 40 or 45, forty-five to fifty per cent are medical cases. They have eye symptoms, it is true, but most of them are different diseases, stigmata of heredity or various and sundry diseases that affect the human body by affecting the eye, and it takes all we have in medical knowledge to be able to differentiate these cases. I don't dare say that every man that wears glasses or every child, is always a medical case. I do say many are medical cases.

But the question of the use of the ophthalmoscope—I don't mean to say that a man should be skilled or proficient to the last word. I don't mean to say he should be able to make a diagnosis of glaucoma quickly and clinically and know what he is doing; but I do say the average individual using the ophthalmoscope in general practice can tell whether an anterior chamber is shallow, whether a pupil is dilated and immobile or not; he can tell whether the optic cup is deep or normal provided he keeps his ophthalmoscope in condition. If he does that, plus getting a history of the case, going into it and getting symptoms, and he bears glaucoma in mind, he is going to do something then and there about that case.

I wish to thank both of the gentlemen for their discussion.

DR. CROOM'S WESNOCA MOVES TO AMBLER HEIGHTS

An institution designed to meet the needs of patients suffering from chronic diseases or conditions will be opened in the plant formerly occupied by the Ambler Heights Sanitarium, by Wesnoca, Inc., an outgrowth of an institution established in Asheville by Dr. G. H. Croom in 1928, and in successful operation to the present.

Wesnoca purposes to provide a type of service, with such accommodations as are needed and required by the host of sufferers with chronic degenerative diseases; and to provide facilities for teaching those not really disabled the fundamentals of healthful living, all at a reasonable rate.

No patients will be received for treatment for active mental disease, drug habituation or tuberculosis.

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

ROYSTER RINGS THE BELL

SOME weeks ago Dr. Hubert A. Royster was asked to supply material for Westbrook Pegler's column in an issue of the *Raleigh Times*, and right nobly did he rise to the occasion.

Dr. Royster has never been one of those I'd-rather-cut-than-eat sort of persons, and he has always deplored the confusing on the part of the public of the operator with the surgeon. Here was an opportunity for telling the public how different are the two, an opportunity for sowing good seed in the hope that a few would fall in good ground.

Well does he protest against the knife being regarded as the symbol of surgery; and well does he picture the surgeon with forceps, a blunt dissector or a needle and thread—instruments far less gruesome, but more widely employed and requiring greater ingenuity in their use. There are many operations, he goes on to say, done wholly without the knife. The singling out of this alarming instrument as the popular embodiment of surgery is but a sign of the fascination for most minds of the terrifying and the dramatic.

In this message to the general public is carried instruction which physicians and surgeons will do well to take to heart. This, for instance:

The modern surgeon is much more of a tailor, or a plumber, than a butcher. Cannot we get rid of such expressions as "going under the knife," "nothing but the knife will do," or "the horror of the knife?" It is not superfluous to remind medical men that:

The surgeon's best instruments are his brains and his fingers; intelligent coördination of these twin faculties makes for the highest grade of surgical performance. Without these agencies, all the devices ever invented are vain and futile.

"We must not omit," says this accomplished and veteran surgeon, "but we must emphasize, the moral perception involved in every surgical thought and act. The character of the surgeon shows in his work. Looked upon as so much slashing, surgical operations do but brutalize those who perform them; viewed in the light of occasions for exercising skill and healing, they are uplifting and purifying. The heroism often exhibited by patients cannot but have its effect upon the surgeon's disposition. Who can behold unmoved a calm mental and moral attitude toward physical suffering?"

It is gratifying to see the courageous part in the drama of the surgical amphitheater assigned to the patient. Many years ago, some great surgeon (Nicholas Senn as it is recalled) dedicated a surgical treatise "to the heroic man at the point of the knife."

This fine paragraph must be included: Even from its most unsatisfactory aspect, sur-

gery must be regarded as a humane profession. Its aid is too often invoked as a last resort. How much better if surgical assistance were made an early resort, if not a first resort, when it is inevitably demanded! Operations done too soon, if actually needed, are so rare as to be inconsiderable; operations done too late furnish the common opprobrium of our art.

No doctor needs to be told this; it is put into a journal for doctors to suggest to them that this is one of the points on which doctors should correct the mistaken opinions of a large part of those designated by some disillusioned individual as *them asses*:

The mission of surgery is to heal, to cure, to banish forever the offending lesion. Our motto is to restore, if we can; to remove, if we must. It takes more capacity to save an organ or a limb than it does to sacrifice one. 'Tis not all of surgery to cut, nor all of operating merely to master the mechanical technique. The true surgeon does not believe that, because an operation *can* be done, it *ought* to be done.

If all of us would avail ourselves of every opportunity to take the cause of Medicine to the public, and present it in the candid yet forceful way Dr. Royster has, the public could be brought to understand our problems better, and to cooperate with us in our efforts to thwart all attempts to obstruct the progress of rational medicine in improving knowledge of prevention and cure, and in making all such knowledge available to all.

RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF HEART DISEASE

EVERY doctor would like, and needs, to know the best for his heart patients. An important part of this is knowledge of the place of the electrocardiograph in diagnosis and treatment; other important parts are how best to use digitalis and mercurial diuretics.

A Denver doctor¹ who has a comprehensive grasp of this problem in an article from which our readers may learn:

In recent years histories and physical examinations have come to mean more to us, but electrocardiography has done most in segregating the various types of heart disease. Indeed it is the *ecg.* that has given new meaning to the results of history-taking and examination.

Today electrocardiographic patterns absolutely diagnostic of six clinical entities have been worked out:

1. Coronary thrombosis
 - a) Anterior left ventricular infarction
 - b) Posterior left ventricular infarction

2. Chronic left ventricular strain
 - a) Hypertension
 - b) Aortic insufficiency
 - c) Aortic stenosis
 - d) Congenital lesions
3. Acute right ventricular strain (acute cor pulmonale)
4. Chronic right ventricular strain (chronic cor pulmonale)
5. Acute fibrinous pericarditis
6. Chronic constrictive pericarditis.

Coronary thrombosis can be a painless catastrophe recognized only by the electrocardiograph.

In chronic ventricular strain the left ventricular muscle, by reason of continued excess work, is unable to carry on normally. It is a reversible process and is not due to coronary sclerosis. The progression or lack of progression of deleterious left ventricular effects can be followed with accuracy.

Pulmonary embolism is the commonest cause of the pattern of acute right ventricular strain present from the instant the mechanical and vasospastic pulmonary resistance is created by the embolus. The pattern may disappear in a few hours or last for weeks and even become chronic.

Any condition which causes acute fibrinous pericarditis produces a characteristic electrocardiographic pattern. Chronic constrictive pericarditis may follow any acute pericarditis, develop with few or no acute manifestations, or arise as a tuberculous process. The changes constitute the chief diagnostic criterion. There are many other conditions in which there are significant electrocardiographic changes.

Now to discuss digitalis, the best digitalis is the powdered whole leaf. The digitalization dose for an average person is 18 to 21 grains, if this total dosage is to be given within a period of four or five days. Of the "new" digitalis, one cat unit per day is a maintenance dose only for young people without any renal involvement; for the middle-aged it may be one cat unit five, or at most six, days a week. If the patient is older, if great restriction of fluid is necessary, or if impairment of renal excretion is present, a maintenance dose of the "new" digitalis may be one cat unit three or four times per week. The earliest signs of over-dosage are unexplained loss of optimism by the patient, followed quickly by unexplained loss of appetite. Nausea and emesis or frequent premature beats mean that the valuable early signs of overdosage have long been overlooked and serious digitalis intoxication exists.

An accurate daily record of the total intake and output of water should always be kept; usually the total fluid intake should be limited to one quart per day until it is apparent just how much fluid

¹ D. Douglas Deeds, Denver, in *Rocky Mountain Med. J.*, June,

can be handled. A salt-free diet may be imperative. Fluid accumulates in the tissues of most cardiac patients.

Mercurial diuretics should be used in the vein as a diagnostic as well as a therapeutic procedure. If the patient does not feel well, and particularly if some dyspnea is present give 2 c.c. of some mercurial diuretic intravenously and watch; frequently there is a tremendous outpouring of fluid from hidden edema. Mercurial diuretics are used to prevent reaccumulation, an injection every other day for several weeks in severe cases. Sixty to 90 grains of enteric-coated potassium nitrate per day on alternate weeks only will often double the urinary output obtained from a single injection of mercurial. Albuminuria is not, but persistent hematuria is, a contraindication to continuance of a mercurial diuretic.

Often the pain of coronary thrombosis can be controlled without the use of morphine.

Most cardiac patients need oxygen for controlling cyanosis and dyspnea, and as a means of administration nothing approaches the efficiency and economy of the B. L. B. mask. This same mask is likewise the best way to administer to asthmatic patients a mixture of helium and oxygen which is often life-saving.

Subacute bacterial endocarditis has been cured by sulapyridine to combat the organism, followed by continuous intravenous therapy with heparin to soften the fibrin and thick plastic material covering the vegetations on the heart valve.

In chronic constrictive pericarditis it is now possible to excise the constricting pericardial sac and effect a cure.

There are now authentic cases on record in which the patent ductus arteriosus has been attacked surgically and successfully ligated with restoration to normal of the circulatory mechanism.

A METHOD OF RECORDING AND REPRODUCING HEART SOUNDS

For a number of years the matter of better utilization of auscultation in the practice and teaching of diagnosis has enlisted a good deal of attention of the Tri-State Medical Association. It looks as though what we sought has been found.¹

The examining physician's impression of the many peculiarities of human heart sounds—normal or abnormal—cannot long be accurately retained; of how much more value would it be if the heart sounds were recorded for future reproduction and comparison with later changes in the sounds over the same heart?

Since the advent of the crystal microphone much advanced knowledge of heart sounds is possible by the following means: 1) the stethograph records the heart sounds so they may be accurately meas-

ured; 2) the cardiophone amplifies them so they may be heard distinctly by the average ear; 3) the cardiophonograph accurately records them so that they may be reproduced at various rates and intensities for careful analysis.

Since murmurs do not suddenly burst into full bloom without a budding stage, it is thought that the sub-audible murmurs can be discovered by these methods, that treatment for the underlying lesion can be instituted earlier and that a more favorable outcome may be expected.

The cardiophonograph which I have developed and have been using for three years is built into a compact carrying case and the loud speaker is in the detachable cover. A long cord connecting the amplifier allows the speaker to be moved to various places in the room or outside.

A four-stage amplifier is placed between the microphone and the cutting head and has a range of 120 decibels. The three-stage amplifier between the pickup and the loud speaker for reproduction has a range of 70 decibels. The frequency response is from 50 to 10,000 cycles per second. A selection tone control for reproduction of either low or high frequencies will increase or decrease these at the will of the operator.

A monitoring calibrated meter is used for volume control when recording and the loud-speaker is in operation at the same time so one may select exactly what one wishes to record.

The pickup is of the crystal type. The input impedance matches the crystal microphone. The microphone is placed over a bell which is composed of soft rubber and this separates it from the chest wall by a chamber of air. The heart sounds, after leaving the chest wall, must pass through this column of air before activating the microphone. The loud speaker is of the electrodynamic type and eight inches in diameter.

For cutting records the revolutions of the turntable are 78 per minute; thus the records can be reproduced on any phonograph. The loud-speaker being used as a control, the microphone can be moved about on the chest (like a stethoscope) and, when the most favorable position is found, the recording can begin.

The records are of two sizes, six inches and 10 inches in diameter. The smaller allows 1½ minutes, the larger 3½ minutes, playing time per side, revolving at the same rate as for recording. The discs are made of hard substance allowing a great number of auditions (from 100 to 700 have been tried) with little wear of the record resulting even when steel needles are used. Reproduction can be tested immediately after cutting and if any exact sounds wanted are not recorded another record can be cut. The amplification can be so increased that

¹ A. L. Smith, Lincoln, Neb., in *Med. Times*, June.

the sounds may be heard clearly in a large auditorium.

When the heart sounds are picked up by the microphone, the electrical impulses are carried through the four-stage amplifier directly to the loud speaker. The microphone must be sealed to the chest wall or squeals will develop. Recordings of 58 fetal hearts—from 5½ months to just before delivery—were attempted and 52 were successful. On one half of the disc is recorded the fetal, on the other the maternal heart sounds. One fetus had a systolic murmur and six weeks after birth the systolic murmur was again recorded.

The heart sounds can be amplified and audited directly from the patient as long as wished. The recorded heart sounds can be reproduced at leisure, given careful study and then filed for future reference. Evolution of any heart disease can be accurately followed through a series of records and will prove an invaluable source for investigative medicine.

Records of heart disease can be accumulated and the whole auscultatory course can be presented in a short time. The recorded discs can be audited until the sounds are mastered. The heart sounds can be broadcast directly from the patient to the students. The student can be supplied with heart records—with proper notations on them—and in the privacy of his own room, without interference from teacher or patient, he can reproduce the heart sounds until he is entirely familiar with them. Stethograms of the same patient will allow one to see as well as hear these sounds.

By broadcasting the fetal heart sounds through the loud-speaker all in the delivery room may continuously follow the changes in the fetal heart. By this method the student can learn the changes in fetal heart sounds during delivery.

The heart sounds of the patient being operated on can be made audible in the operating room and each interested person can interpret the condition of the patient according to his ability and this ability should constantly improve.

DR. BUXTON'S DEPARTMENT

BEGINNING with the issue for June a Department of Proctology was instituted with Dr. Russell Buxton, of Newport News, Virginia, as Editor. Dr. Buxton does not confine his work to proctology. He does general surgery, as did his distinguished father, Dr. Joseph T. Buxton, until his death in 1940.

It is in the field of proctology, perhaps, that most inexcusable errors of diagnosis are made, and with gravest consequences. The first editorial offered for this Department elaborates this point. He urges that on the least suspicion a digital examination of the rectum be made, and that doctors

be very suspicious.

From month to month this Department will carry the best of established knowledge in this field, with due notice of alleged additions to this knowledge, and their evaluation by the Department Editor.

PROFESSOR ALLAN

SINCE his entry on the study of medicine, William Allan has been a research worker. This does not mean that he did not develop into a superb clinician. His decades as favorite consultant of his section attest to his distinguished ability as diagnostician and therapist. For many years, if a doctor falls ill in Piedmont Carolina and doesn't call for Dr. Allan it is because he doesn't think he is much sick.

But he has never been content to just practice the best medicine of his day by keeping up with the advances made by others. He has wanted to make his own contribution to medical advancement. And his accomplishment in this field has been large, notably as to heredity's influence and as to amebic infestation.

The medical school Wake Forest College is soon to open, recognizing the importance of the factor of heredity in the practice of medicine, has established such a chair, and recognizing Dr. Allan's eminent fitness for its occupancy has called him to Winston.

Dr. Allan will be happy in the work nearest his heart, and his ability will constitute a great pillar of strength in this medical school soon to open under such favorable auspices.

All Charlotte is sorry to see him leave, yet glad for him to obtain this high recognition which he so richly deserves.

THE GENERAL PRACTITIONER IN TUBERCULOSIS

(Celric Northop, San Haven, N. Dak., in *Jl.-Lancet*, May)

Supposing that you have discovered a case of active pulmonary tuberculosis in a parent, and in applying Mantoux tests and taking x-rays you find all of the children positive reactors and two or three with parenchymal or glandular involvement by a primary lesion. Should they be sent to the sanatorium? It was formerly believed all over the country that the hospitalization of patients with childhood type of tuberculosis was a worth-while procedure. Considerable data prove that it is money *not* well spent to hospitalize first-infection tuberculosis. Primary tuberculosis is for the most part a self-limited disease. It merely requires good hygiene, adequate diet, rest proportional to the severity of the involvement and, most important of all, that the contact from whence the youngster received his infection be broken. Following out this thought there has been a closing of preventoria all over the country. My special message to general practitioners is make every effort to locate and examine the contacts of diagnosed cases of pulmonary tuberculosis in your community. There are funds available for the examination and x-raying of all contacts of diagnosed cases in persons who cannot afford the cost of such an examination. It is merely necessary to communicate with the local or county

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A BIT ABOUT CHRISTIAN SCIENCE

CHRISTIAN SCIENCE COMMITTEE ON PUBLICATION

FOR THE STATE OF NORTH CAROLINA
106 GROVE ARCADE BLDG.
ASHEVILLE, N. C.

July 2, 1941

James M. Northington, M.D.,
Editor Southern Medicine & Surgery,
Charlotte, North Carolina.

Dear Editor:

Certain erroneous conclusions are implied in the June issue of your Publication, under the caption: "AS PUZZLING AS HESS' TRIP," which associates the name of Mary Baker Eddy with the statement ".....a sect that denies the very existence of disease and obstructs and impedes Medicine to the utmost of its ability....." It is kindly requested that you carry this short letter in your July number, which will serve to clarify.

Now it is at once admitted that to material sense reasoning, which without discrimination accepts man as wholly mortal, disease may appear very real—even solid conviction. Reasoning, however, about the Creator and His creation, man, including his relationship to disease, in the light of Christian Science, which manifestly is the point at issue; we are justified in going direct to the Christian Scientist's denominational text books, the Bible, and Science & Health with Key to the Scriptures, by Mary Baker Eddy. The Apostle John affirms (John 4:24) "God is a Spirit," and in Genesis 1:26, we read: "And God said, Let us make man in our image, after our likeness: and let them have dominion.....". Meanwhile, the author of Science & Health, page 182, succinctly declares: "To admit that sickness is a condition over which God has no control, is to suppose that omnipotent power is powerless on some occasions."

Fundamentally, there is no basis for dissension between the Christian Scientists and those of the Medical Fraternity; neither are health programs opposed; (both of which were implied) when intended for those who wish to avail themselves of such ministrations. One point, however, is definite; that ambitious medical legislation, designed to bring all under its arbitrary restrictions, and to limit the choice of treatment without respect to convictions, will as usual, be opposed, and vigorously; even until the inevitable conclusion is harmoniously reached, that under the provisions of our blessed Constitutions and Bill of Rights, equal privileges are vouchsafed to all.

Obviously, when Lord Lothian, who in your editorial is described as "a disciple of Mary Baker Eddy" approached the Rockefeller Foundation in behalf of British medical students, and was granted the initial and substantial sum of \$100,000 toward

enabling them to complete their courses in American and Canadian institutions, he, as a public servant, was rendering to his beloved homeland, an unselfish and probably immeasurable service; for while none would move to restrain his individual liberties, not all, perhaps, of his beleaguered nation, shared his devout spiritual convictions. Indeed, another recent incident of perhaps parallel interest is at this point recalled. A venerable woman, who lived in New York state, bequeathed the bulk and residue of her estate, ranging into some millions, for the philanthropic purpose of aiding in the building of Christian Science edifices. A clause in her Will reads in part: "I desire to state that I am not a member of any Christian Science church, and have never taken the lessons given by the authorized teachers in said church; but I believe that the people who are studying the Bible in connection with the teachings of Mary Baker Eddy, are living exceptionally good lives . . . and by their goodness and example are making less the evils that come into the world through sin." Manifestly, the divinity of the Christ is a potent power in the humanity of these times.

WILLIAM CARSON BLACKBURN,

Christian Science Committee on Publication.

(Every doctor reader of this journal knows how disingenuous this letter is. The point is *not* whether man is wholly mortal; it is that in this mortal existence he has physical (often mortal) diseases.

There is solid basis for Medicine to dissent to practically everything that Mary Baker Eddy's disciples stand for.

As to how worthy of credence "Health & Science" is and as to the activities of the Christian Science Committee on Publication, we gladly tender the loan of a very revealing book, by three authors: Woodbridge Riley, Ph.D., member of the American Psychological Association; F. W. Peabody, LL.B., member of the Massachusetts Bar; and Chas. E. Humiston, M.D., Professor of Surgery, Univ. of Illinois. The title is "The Faith, The Falsity and the Failure of Christian Science;" publisher, Fleming H. Revell Company, New York.—*The Editor.*)

TUBERCULOSIS—from Page 404

chairman to that effect and funds will be provided to defray the cost of the examination. These funds are from Christmas Seal Sales.

When patients are discharged from the sanatorium it is our wish that each and everyone should return to the physician who referred him to the sanatorium. Those patients who need pneumothorax refills should be taken care of by the family physician if he is familiar with this type of work and has access to a pneumothorax machine, and a fluoroscope or x-ray machine, preferably all three. It is the legal responsibility of the county from whence the patient came to take care of the expense of these refills for those who are unable to pay.

NEWS

INTEREST IN NORTH CAROLINA'S HEALTH PROGRAM

Health officials in Mississippi, Alabama and Tennessee are contemplating the establishment of programs patterned after North Carolina's school health coordinating services.

Dr. John F. Kendrick and Dr. John A. Ferrell, both of the Rockefeller Foundation, held conferences with health officers of the three States early in the month.

DR. SANGER AND DR. NEGUS ADDRESS HOMEOPATHS

Dr. Desiderio Roman, chief surgeon of St. Luke's and Children's Homeopathic Hospital of Philadelphia, Dr. William T. Sanger, president of the Medical College of Virginia, and Dr. Sidney S. Negus, Professor of Chemistry at the Medical College of Virginia, were the principal speakers at the concluding banquet of the American Institute of Homeopathy convention, June 19th, at Old Point Comfort.

Dr. Roman is a native of South America, a graduate of Hahnemann Medical College of Philadelphia, a Fellow of the American College of Surgeons and a recognized authority on diseases of the thyroid gland.

THOMASVILLE HOSPITAL FUND DRIVE NEARS GOAL

For the drive for additions to the City Memorial Hospital, Thomasville, N. C., more than \$16,000 of the \$18,000 needed is already raised. The drive is being conducted by the trustees and the members of the medical staff of the hospital, divided into eight groups as follows: Dr. R. K. Farrington and Dr. O. R. Hodgins; Dr. C. H. Phillips and Doak Finch; Dr. P. M. Sherrill and T. Austin Finch; Dr. R. L. MacDonald and R. B. Eleazer; Dr. Joe Farrington and D. A. Long, Jr.; Dr. J. C. Pennington and James E. Lambeth, Sr.; Dr. R. H. Holliday and Dr. G. T. Alexander; and Dr. R. G. Jennings, Dr. R. W. Crews and Dr. W. G. Smith.

WAYNESBORO HOSPITAL REORGANIZATION

Dr. H. B. Webb has been made Physician-in-Charge of the Waynesboro (Va.) Community Hospital. In this capacity he will act as administrator and conduct his practice of medicine and surgery with offices at the hospital.

In 1937 Dr. Webb was president of the group which organized and erected the Waynesboro General Hospital, which later was reorganized on a community basis as Waynesboro Community Hospital. Since August 15th, 1940, he has served as president of the hospital staff. In assuming duties as physician in charge Dr. Webb said there would be no staff changes—either medical or administrative—except the addition of Miss Lucile Menefer to the administrative staff. She has heretofore been employed in Dr. Webb's office downtown.

TWO SOUTH AMERICANS STUDY HEALTH WORK IN VIRGINIA

Dr. Paul Pena, Director of the National Department of Health of Paraguay, and Dr. Juan Antonio Montoya of Colombia, recently completed courses in public health work at Johns Hopkins University. Virginia's State Health Department was recommended to them by Dr. Hugh S. Cummings, Director of the Pan-American Sanitary Bureau, as a good one to study for practical application of public health methods. They will continue their investigations in Richmond and in various parts of the State, including district branch offices at Abingdon and Norfolk.

VIRGINIA NEGRO DOCTORS

The Old Dominion Medical Society, Negro, brought to a close its annual convention June 5th at Hampton Institute by naming Dr. W. M. Hoffer of Suffolk as president and selecting other officers for the year:

President-elect for 1942, Dr. F. R. Trigg, Norfolk; first vice-president, Dr. Henry W. Williams, Petersburg; second vice-president, Dr. J. B. Blayton, Williamsburg; executive secretary, Dr. W. P. Collette of Norfolk; assistant secretary, Dr. Harrison Franklin, and treasurer, Dr. A. B. Green, Sr., of Norfolk.

The AMERICAN PSYCHIATRIC ASSOCIATION has organized a committee to prepare a history of psychiatry in the United States. The Committee on the History of Psychiatry is composed of Dr. Gregory Zilboorg, Chairman, New York; Dr. Earl D. Bond, of the Pennsylvania Hospital, Department of Mental Diseases, Philadelphia; Dr. C. C. Fry, of the School of Medicine, Yale University; Dr. Hugh Carter Henry, Director of State Hospitals of Virginia, Richmond. The hope is entertained that the history may be finished against the Centennial meeting of the American Psychiatric Association in Philadelphia in 1944.

DR. RALPH MOSCHELLA, for the past two years a member of the staff of the H. F. Long Hospital in Statesville, has returned to Massachusetts, of which State he is a native, to engage in private practice.

DR. L. D. HAGAMAN has been elected Director of the Public Health Service of the district composed of Caldwell and Burke Counties. Dr. Hagaman has been engaged in private practice at Boone, but he has been assistant director of the district for a few months.

DR. JOHN H. BONNER, since 1938 Public Health Officer of the district in Virginia composed of Page, Warren and Shenandoah Counties, has resigned. He will return to his native State on September 1st, and engage in private practice at Elizabeth City, North Carolina.

DR. R. FINLEY GAYLE, JR., of Richmond, has been elected to membership in the American Neurological Association. The other members of the Association in Virginia are Dr. Beverley R. Tucker, Dr. Claude C. Coleman and Dr. David C. Wilson.

DR. MILLARD C. HANSON is the new commissioner of health for the city of Richmond. Dr. Hanson's background of five years of general practice, ten years as health officer, first of Mansfield, later of Toledo, Ohio, and one year in Syphilis Control in Pittsburgh, promises well for efficient work in Richmond.

UNIVERSITY OF VIRGINIA

On May 13th, Dr. W. W. Waddell, Jr., spoke before the Mississippi State Medical Association, meeting in Biloxi. His subject was Vitamin K in the Newborn.

At the meeting of the St. Louis Medical Society on May 13th, Dr. Vincent W. Archer discussed X-Ray and Gastro-Intestinal Diagnosis.

On May 22nd, Dr. J. M. Meredith participated in the Post-Graduate Course in Medicine and Surgery for the Loudoun County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. He spoke on Management of Head Injuries.

At the meeting of the American Otological Society in Atlantic City on May 26th, Dr. Fletcher D. Woodward presented a paper on The Use of a Temporary Inexpensive Bite Block to Determine the Relationship Between the

Closed Bite and Temporomandibular Joint Symptoms.

Drs. Fletcher Woodward and Oscar Swineford, Jr., presented a joint paper before the Oto-Rhino-Laryngological Section of the American Medical Association in Cleveland entitled, Allergic Rhinitis.

At the recent meeting of the American Society for the Study of Allergy held in Cleveland, Dr. Oscar Swineford, Jr., was elected Vice-President for the coming year.

Fifty-four students were graduated with the degree of Doctor of Medicine at the finals exercises on June 9th.

The Second Post-Graduate Course in Medicine sponsored by the Department of Internal Medicine of the University of Virginia and the Department of Clinical and Medical Education of the Medical Society of Virginia was held at the Medical School and Hospital from June 16th to 21st. The guest speakers were Dr. Warfield M. Firor, Associate Professor of Surgery at Johns Hopkins Medical School, who spoke on Sulfaguanidine, and Dr. Walter O. Klingman, Associate in Neurology at the College of Physicians and Surgeons in New York City, who discussed Autonomic Drugs. The list of those giving lectures and holding clinics included thirty members of the faculty. Thirty-one physicians registered for the course.

MARRIED

Dr. William L. Venning, of Arlington, Virginia, and Dr. Laura Ross, of Charlotte, North Carolina, were married June 13th. Mrs. Venning is a daughter of Dr. Otho Ross.

Miss Randolph MacDonald Arnold, talented Virginia artist, and Dr. Otto Edward Aufranc, of Boston, were married June 28th in the garden of Rose Terrace, the home of Dr. and Mrs. L. Wilson Jarman. Dr. Jarman is the president of Mary Baldwin College, Staunton, Va., where Miss Arnold has been a member of the faculty for the past four years. Dr. Aufranc was graduated from the University of Missouri and from the Medical School of Harvard University and is now assistant to Dr. M. N. Smith Petersen, noted orthopedic surgeon, and is a member of the staff of Massachusetts General Hospital.

Miss Flora Phillips Miller, of Ellersong, Virginia, and Doctor Thomas Nathaniel Jacob, Junior, of Onancock, Virginia, June 21st.

Dr. J. Dent Summers, of Statesville, North Carolina, and Miss June Rogers, of Burlington, Iowa, were married on June 21st. Dr. Summers will serve an internship in a hospital in Cleveland.

Dr. Stanley H. Macht, of Crewe, and Miss Naomi Newman, of Danville, Virginia, were married on July 1st.

Dr. William Taliaferro Thompson, Jr., and Miss Jessie Gresham Baker, of Richmond, were married on June 21st.

Dr. Francis Record Whitehouse, of Lynchburg, and Miss Doris Irion, of Dallas, Texas, were married on June 21st. Dr. Whitehouse is a member of the Mayo staff.

Dr. John Hansford Thomas, Jr., of Greenville, in Augusta County, Virginia, and Miss Mary Johnston Lasly, of Staunton, Virginia, were married on June 19th.

DIED

Major Allen J. Black, 76, U. S. Army Medical Corps, retired, died suddenly June 25th at his home in Richmond, of a heart attack. He received his medical degree in the class of 1884 at the Medical College of Virginia; then practiced his profession at Radford and Roanoke for several years before entering the Army. He served as a medical officer in Cuba during the Spanish-American War and later in the Philippines during the insurrection there. He

was commissioned major in 1917 and served in the World War. He retired from active duty in 1928 and had made his home in Richmond since that time.

Dr. Richard Franklin Slaughter, Jr., of Augusta, Ga., Head of the Department of Neuro-surgery at the University of Georgia Medical School, died at Johns Hopkins Hospital July 3d, after a six months' illness, of a brain ailment. He was a graduate of the University of Virginia, and had served on the staffs of hospitals in Baltimore, Richmond and Boston. A native of Hampton, Va., before going to the University of Georgia four years ago, he practiced in Norfolk.

Dr. Percy E. Lilly, of Kilmarnock, Virginia, died suddenly of a heart attack at his home, on the 15th of June. He was 63 years of age, a graduate of the University of Maryland's Medical Class of 1901.

Dr. Thomas D. Jones, a graduate of the Medical College of Virginia Class of 1906, died at his home in Richmond, June 13th. For many years Dr. Jones had limited his practice to pediatrics, and in that specialty he had established an enviable reputation for skillful and sympathetic ministrations.

Dr. Fred Brooks, 82, died June 21st, at the home of a patient he was attending. A native of Popeshead, Va., Dr. Brooks started his practice in Fairfax County in 1883. He was president of the National Bank of Fairfax for more than 25 years, for 10 years was chairman of the County School Board, and a founder of the Fairfax County Medical Society.

To be cut and pasted over parts of Dr. Elliott's article in May issue.

P 252, col. 1, l. 3 to 7—

Surgery that blood plasma could be used as a substitute for whole blood, that it could be preserved for long periods, that it could be used without typing and cross-matching. Extensive experimentation developed equipment for the aseptic

P. 252, col. 2, paragraph 3—

In some diseases the intramuscular and subcutaneous administration of plasma has been found to be equally as effective as the intravenous. These routes are particularly effective for transfusion of blood plasma into premature infants, babies and small children whose veins are difficult to enter. Patients of this age who are in dire need of blood often have normal red cell counts. Their need is for plasma rather than for red cells, and plasma can be administered intramuscularly in most cases as effectively as intravenously.

P. 252, col. 2 1st 3 lines of par. 5—

Red cells do not create colloid osmotic pressure or materially increase the effective blood volume or pressure, and can not circulate effectively.

P. 253, col. 1, line 1

heart is merely a pumping and propelling

P. 253, col. 1, lines 10 and 11—

body could be segregated there. However, only a part of the capillaries are active at any given time

P. 253, col. 1, par. 2, line 8

investigators of shock; namely: (1) decreased cardiac

BOOKS



FEARFULLY AND WONDERFULLY MADE: The Human Organism in the Light of Modern Science, by RENEE VON EULENBURG-WIENER. *The Macmillan Company*, New York. 1939. \$3.50.

The author complains that, though the materialistic viewpoint no longer governs in the field of the exact sciences, it survives in the field of biology. In his opinion the intolerance of the ecclesiastical rulers of the Middle Ages finds its counterpart in the scientific dogmatism of today.

That the nature of the cell is not fully understood, certainly no one is disposed to deny; but the reasoning of the author from that fact will appear to many to be more ingenious than convincing.

There are chapters on the cell, human embryology, food and its digestion, the blood, on the various organs and systems and their physiology; others on the new physics and biology, energetics of the living organism, the different senses and on the human organism as a whole.

The book has an aspect of metaphysical profundity, and it may have much meaning to those who can understand it, of which number this reviewer is not one.

X-RAY TREATMENT OF CHRONIC ARTHRITIS (Including the X-Ray Diagnosis of the Disease), by KARL GOLDHAMER, M.D., Associate Director, Quincy X-ray and Radium Laboratories, Quincy, Ill., Formerly Roentgenologist, University of Vienna; Author, *Atlas of Normal Anatomy of Head* as seen by X-ray; with foreword by HAROLD SWANBERG, B.S., M.D., F.A.C.P., Editor Mississippi Valley Medical Journal and the Radiologic Review, Radiologist, St Mary's Hospital and Blessing Hospital; Director, Quincy X-ray and Radium Laboratories. *Radiological Review Publishing Co.*, Quincy, Ill. \$2.00 post paid.

This comprehensive treatise on the x-ray treatment of chronic arthritis is based on the author's experience of 20 years in the treatment of this disorder in Vienna and in this country. Clinical aspects, pathology, roentgen diagnosis and differential diagnosis, history of x-ray therapy and how x-ray acts in chronic arthritis, what cases should be treated by x-rays, technic of treatment, report of cases, and results—all these are well covered, with numerous illustrations by the author serving to elaborate the text.

A PRIMER FOR DIABETIC PATIENTS: By RUSSELL M. WILDER M.D., Ph.D., F.A.C.P., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota; Head of Section on Metabolism Therapy, Division of Medicine, The Mayo Clinic. Seventh Edition, Reset. 184 pages. Philadelphia and London: *W. B. Saunders Co.*, 1941. \$1.75.

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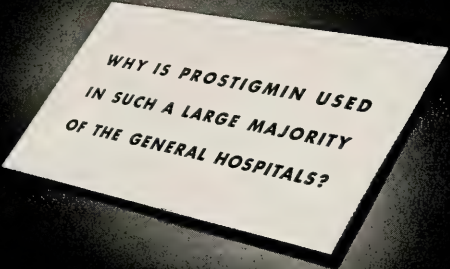
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ORBITAL TUMORS: Results following the Transcranial Operative Attack, by WALTER E. DANDY, *Oskan Priest*, New York. 1941. \$5.00.

To meet the great need for an improved technique for removing tumors of the orbit, Dr. Dandy has devised a special transfrontal method for operative attack on deep-orbit tumors and any intracranial extensions. At the Hopkins tumors in the anterior portion of the orbit and not suspected of intracranial extension are operated on by the ophthalmologic surgeon by either the subconjunctival or the upper orbital route; others are referred to the neurosurgical service.

This book describes the new operative technique and the results obtained by its use in the past several years in the large number of cases of this kind of tumor brought to the Johns Hopkins Hospital. Illustrative case reports and pictures, freely used, supplement the text. The operative mortality has been very low.

INFANTILE PARALYSIS: By PHILLIP LEWIN, M.D., F.A.C.S., Associate Professor of Bone and Joint Surgery, Northwestern University Medical School, Professor of Orthopedic Surgery, Cook County Graduate School of Medicine; Attending Orthopedic Surgeon, Cook County and Michael Reese Hospitals; Consulting Orthopedic Surgeon, Municipal Contagious Disease Hospital, Chicago. Illustrated by Harold Laufman, M.D. 372 pages with 165 illustrations. *W. B. Saunders Company*, Philadelphia and London. 1941. Price \$6.00.

The book is written to guide the student, family doctor, pediatrician and orthopedist in the early recognition and proper treatment of poliomyelitis. The development of our knowledge of this is traced from the earliest times. Peculiarities of the causative agent, mode of transmission, resistance and immunity are briefly described. Symptoms, methods of examination, diagnosis and management in every phase are detailed.

Prognosis depends to a considerable extent on the mother and the doctor who sees the patient first.

Preventive measures include guarding against raw milk, fatigue, flies, kissing. Raw fruits and vegetables should be carefully selected and peeled and cleaned. Active immunization, the use of convalescent serum, nasal spraying—all are of uncertain value. Active general treatment is required largely and frequently from many individuals. It is advised that the orthopedic surgeon be called in as soon as the disease is suspected.

The author is fully conversant with the present state of our knowledge of poliomyelitis, and he has written a book that contains that knowledge, which should be known to every doctor who has

anything to do with the care of the health of children.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY: A complete Dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. NEWMAN DORLAND, A.M., M.D., F.A.C.S., Lieutenant-Colonel, M.R.C., U. S. Army; Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association, Editor of the "American Pocket Medical Dictionary". With the Collaboration of E. C. L. MILLER, M. D., Medical College of Virginia. Nineteenth Edition, Revised and Enlarged. 1647 pages with 914 illustrations; including 269 portraits. Flexible and Stiff Binding. *W. B. Saunders Company*, 1941. Philadelphia and London. Plain \$7.00. Thumb-Index, \$7.50.

This edition has received the thorough revision of every edition since the first; and a great many new words, new tests and other things new have been added.

It seems evident that there was never a time, since the first dictionary, in which the so-called educated so sadly needed to use dictionaries assiduously—and this particularly applies to members of the medical profession; and never were such good dictionaries to be had. The one under review is, in itself, a good part of an excellent medical library.



A SIMPLE AND EFFECTIVE METHOD IN THE TREATMENT OF ECZEMA

(Jos. Ragany, Trenton, N. J., in *Med. Rec.*, June 18th)

Two opposing viewpoints as to the cause of eczema are that it is caused by (1) endogenous factors and systemic disorders and (2) exogenous factors. Those holding the first theory try to explain skin disease as the result of faulty diet, the toxic products of metabolism, or certain nervous influences, including the menopause, allergic conditions, or personal idiosyncrasies. The second school denies the existence of internal causes and considers eczema as a manifestation of purely external irritation or agents affecting the skin's surface. Neither is tenable, as the sole causal agency.

We do know that the chief underlying physiological change present in eczematous conditions is inactivity of the sebaceous glands of the skin.

Diseased skins were treated with various kinds of oil, occasionally oil packs for the removal of scales and crusts. After many trials the therapy was limited to simple olive oil, having found that, after a few weeks' constant application, it gave better results than any of the ointments.

The eczematous skin treated with a continuous olive oil dressing was, after two weeks and three months, respectively, unable to absorb more of the oil through its surface. At the same time, the skin lost its dryness and the eczematous condition disappeared. During the last eight years, I have tried this olive oil treatment on 134 patients, of whom 112 have been completely cured without recurrences so far. The failures were the result of improper methods of application.

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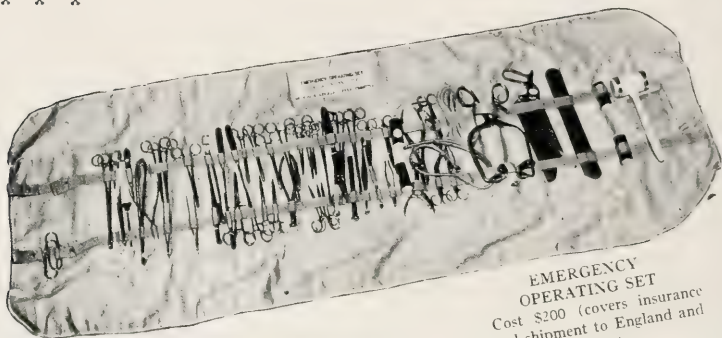
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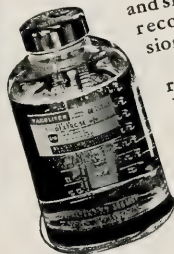
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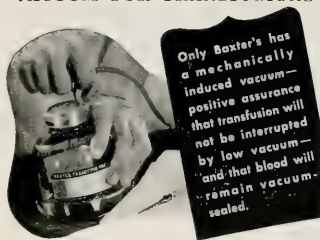
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JAMES M. NORTHINGTON, M.D., Editor

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No. 8

Forty-Two Years of Appendicitis*

ROBERT L. GIBBON, M.D., Charlotte

OUR SECRETARY seems to think that I belong to a certain group from whom it might be interesting to have a portrayal of Surgery in the early period of what we know as Modern Surgery. To have personally participated in much of this formative stage, a man should have received his degree of Doctor of Medicine not later than 1890. Obviously our friend, the secretary, was limited by the ravages of time and physical infirmity, in available material from which to make a selection. Under the circumstances, let us hope he did the best he could.

The great men who most ably contributed to those formative years of contemporary surgery have in a great measure crossed the Great Divide, but a minority are still with us. The autobiographies of these latter and the more numerous biographies of the former, together with the many articles and addresses dealing with the progress of our profession, furnished us a broad as well as a detailed picture of the old and of the new in surgical practice.

I feel therefore, that any formal attempt at a resumé of what has already been so well done would be in every aspect but vain repetition. For this reason I shall confine my remarks to an effort to depict the gradual adoption of the New Order by the profession in our small towns and cities, at that time far removed from any of the great medical centers of teaching and hospitals. From all information and observations, I am convinced that there is a remarkable similarity in the experience of all these small communities such as was ours, in whatever part of the United States they were situated.

For most of you it is necessary to recall the type

of education our medical schools were furnishing at that time. In even the best of them the instruction was almost entirely didactic, and it was possible for a student who had never seen a case of labor to make a perfect mark on final examination in obstetrics. A similar lack of clinical experience was characteristic of other departments. The notable improvement in medical teaching is not the least of the many changes that distinguish the present era. As a result of the old system, the young graduate, however well grounded in the scientific theories of the professors of that time was very poorly prepared in the art of practice. Except for the fortunate few who obtained one of the rather scarce big hospital appointments, or who were able to supplement their acquirements by a visit to one of the great European universities, the average young physician was compelled to spend years in actual practice before he became reasonably proficient. Lucky he was if he could make a connection with an older man, already established. In spite of these handicaps, then as always, where there was the will to self improvement ways and means could be found to make up what had been lost by a poor start.

The medical profession has always had a reputation for professional jealousy. This was particularly noticeable in small towns. High hats and gold-headed canes were still in fashion, as indeed were whiskers in great variety of style and profusion. They served in conjunction with a certain pomposity of manner in camouflaging not a few empty heads. Except for diseases of the ear, eye, nose and throat, specialism was unknown and the general practitioner usually considered himself as proficient as any colleague in all branches of the curative art.

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

*The Tri-State Medical Association is 42 years old.

Some were even loth to call a local consultant unless forced by the patient or his friends, for fear of diminishing their prestige.

And then came a flock of recent graduates, young men with quite a smattering of bacteriology and pathology and a surgical technique which greatly enlarged the boundaries of surgery, and greatly diminished its casualties. They called it antiseptic surgery; and, although as compared with modern methods it was very clumsy and sloppy, the results were far superior to those of former practice. Of course, its greatest advantage was that it opened a new field of great promise and was the logical antecedent to our present aseptic technique. The surgeons of that day could be distinguished by their hands, discolored by frequent immersion in various antiseptic solutions ranging from the odorous 5 per cent carbolic acid, through the corrosive mercury chloride 1 to 1000, to the lovely purple of permanganate of potash in various strengths. The introduction of rubber gloves was a great help toward the solution of our problem of hand sterilization. They also proved a safeguard against infection of the surgeon himself while handling infectious wounds.

The small-town surgeon had to spend much time and effort in frequent visits to the great clinics of the country, as well as in attendance upon meetings of medical and surgical societies. Travel clubs were organized and practically all the larger hospitals of the United States and Canada were visited. At night we got together and discussed what we had seen during the day. I always felt that the Mayo Clinic at Rochester, where there were no outside diversions, and where the cases were concentrated in one place, was a peculiarly satisfactory place to visit. The kindly, approachable, helpful attitude of the distinguished brothers was not the least of its attractions.

Dr. Northington has given me some extracts from the writings of prominent surgeons and medical men of those days, dealing with the then controversial subject of appendicitis. Here is illustrated how, out of the discussions which raged for years, our present attitude toward this disease was gradually evolved.

You will note in the following quotations there was quite a variety of views as to the nomenclature, and the etiology, as well as the treatment.

It seems remarkable that observations of the fact that general peritonitis and death could be caused by inflammatory destruction of the appendix were made so long before it was recognized that appendicitis is far the commonest cause of this disaster. An illustrative case, in which reference is made to two similar cases, was reported in the

territory of this Association four-score-and-six years ago.

"A case of Rupture of the Appendix Vermiformis," by F. M. Robertson, M. D., Charleston, S. C. in the *Charleston Medical Journal*, 1853.

A stable-boy the property of the doctor, whose previous health had been good, on August 29th had a slight griping pain and was given a simple anodyne. The next day he began attending the horses as usual. He was found lying on a feed box having intermittent severe pains at and below the navel. Told to go to his room, as he was passing to a stairway he was overcome with violent agony. He was carried to his room, given 20 grains of opium, and a mustard plaster applied. Four hours later (at 11:00 a.m.) he was still suffering severely was hiccuping and vomiting. One-half grain morphine and a drachm of chloroform and a salt enema given. At 7:00 p.m. he was in less pain, extremely tender. A blister 7x8. A powder of 5 grains of calomel, 1 grain of opium and 30 grains of ipecac every 2 hours. The next day the boy was given a wine-glass of champagne every half hour. He went steadily down hill, died at 2:00 a.m. on September 1st.

At postmortem, 4 hours later, the general peritoneal cavity contained much effusion, an abscess was found implicating the vermiform appendix which was ruptured across completely.

In the present case the *caecum was perfectly healthy*.

This was the third case in the doctor's practice of 26 years. The first was reported in the same journal, the *Charleston Medical Journal*, in 1847.

Evidently the Doctor denied his slave boy neither his assiduous care nor his treasured champagne. Evidently it struck him as odd that the cecum was not diseased. His intellectual interest was excited. Here was the opportunity; but it went neglected for another thirty years.

Gross' *System of Surgery* (1882) makes no mention of appendicitis, or even of typhlitis. It does say that perityphlitic abscess may arise from cancer disease of the colon, or vermiform appendix and that "the most common cause is the lodgement of some extraneous matter in the caecal appendix."

For Pepper's *System of Medicine* (1884). James T. Whittaker, Professor of Medicine in the Medical College of Ohio, writes:

Typhlitis, inflammation of or about the head of the colon, more especially the vermiform process, is a disease of modern recognition. It is to Dupuytren that the credit is due of having first individualized this disease as a separate affection. About the same time (1827) Longer Villermay published his communications in the *Archives gen.*, t. v. 246, on the diseases of the vermiform process. Stokes and Petrequin (1837) wrote on the value of opium in the treatment of perforation of the vermiform appendix. Matterstock (1880) deserves mention for having given prominence to anomalies of the vermiform appendix in the etiology of the

affection. Kraussold expresses his convictions regarding the necessity of early evacuation, by incision, of inflammatory products, as first practiced by Willard Parker in 1843.

It is the rule to discover in the vermiform appendix in these cases either fecal concretions or foreign bodies. In cases of more acute course the lesions are often found centered about the vermiform appendix. The most various contortions, adhesions, or erosions are observed in this structure. Occasionally a constriction occludes the course of the tube, while the distal end is dilated into a condition of hydrops. It may be found perforated in one or in several places. The cicatrices or agglutinations of old attacks may be encountered.

In adults the disease begins as a rule with violent signs; in children there is often a prodromatous stage. Fever is not a necessary factor. The pulse is usually accelerated, full and hard. Every form of typhilitis is more fatal in childhood than in adult life. The greater danger in childhood lies in the greater liability to peritonitis. The mortality of perityphlitis alone in childhood is 70, in adult life 30 per cent.

The general adoption of the opium treatment has reduced the mortality in adult life from 80 per cent, the appalling figure of the older statistics (Volz), to 30 per cent, the ratio of modern times.

In 1872, Bull of New York had to report 67 cases of perityphlitic abscess collected by him, mostly treated without operation, a mortality of 47½ per cent; while 10 years later (1882) Noyes of Providence was able to report of 100 cases treated by operation a mortality of only 15 per cent.

Since in childhood perforation has occurred in insidious cases after so slight an irritation as a laxative or an enema, or even after a bath, every provocation of this kind should be avoided. Injunction is to be put upon all solid food in all cases in the inception as well as throughout the course of the affection, that the element of coprostasis be not superadded to the irritation of the disease. Many cases of typhilitis are aborted by the observance of absolute rest and abstinence from food or rigid diet at the start. A peri- or paratyphlitis demands a treatment that shall put the bowels at rest. Opium is called for at the start, with the double view of preventing the irregular, spasmodic, or tetanic contraction of the muscular coat and of obviating the danger of peritonitis.

When a quick action is required, morphine hypodermically may be preferred.

Austin Flint, in the Fifth Edition of his *Practice of Medicine* (1884):

The appendix is a part of the caecum, but in-

flammation and perforation here may occur independently of any affection of the caecum proper. The term typhlitis is applied to inflammation of the vermiform appendix as well as to caecitis. Perforation of the caecum is much more infrequent than of the appendix. Acute inflammation of the appendix was described by James Jackson, in his "Letters to a Young Physician"—the pain as seated on a horizontal line connecting the anterior superior spinous processes of the ilia at the point where this line intersects the right margin of the right rectus muscle. Marked tenderness on pressure exists within a circumscribed space. In several cases detailed by Jackson the pain and tenderness, together with the tumor, slowly disappeared under treatment with cathartics, leeches, a blister to the part, and opium to relieve pain. I have met with cases corresponding to those which he described, and it seems to me clear they are cases of acute inflammation of the appendix.

In the cases which have come under my observation, the patients generally had had uncomfortable sensations in the iliac region for two or three days, and in many instances had taken some cathartic medicine thinking that they were "bilious" or needed "clearing out." Suddenly a sharp pain forced them to seek medical advice. In a short time were developed the symptoms of a diffuse peritonitis which, under these circumstances, proves fatal as a rule. At the autopsy, generally, within the appendix hard bodies are found, to which it is customary to attribute the perforation.

In the examination of bodies dead with other diseases, old adhesions are frequently found. I have seen a specimen in which the appendix was attached to the bladder, and perforation had taken place causing a vesico-intestinal fistula. The first evidence of this was the appearance of a lumbricoid worm at the end of the penis. Pain or uneasiness referred to the right iliac fossa, without other symptoms of disease, should always excite apprehension in the mind of the physician. Rest should be enjoined and cathartics avoided. By these precautions, if patients seek advice prior to perforation, its occurrence may perhaps be prevented.

It looks as though we must credit the physicians with being 'way ahead of the surgeons in recognizing the dangers from purging in the beginning of an attack of appendicitis.

In Pepper's *System of Medicine*, 1885, one year before Reginald Fitz showed that typhlitis is very rare, appendicitis very common, James T. Whitaker, of Cincinnati, Professor of Medicine in the University of Ohio, defined typhlitis as "inflammation of or about the head of the colon, more especially the vermiform appendix." He said that under abstinence from food and complete rest many recoveries resulted.

The "History of Medicine," by Joh. Hermann Bass, of Worms-on-the-Rhine, (1889) makes no mention of appendicitis, nor of Fitz.

In Keating's *Cyclopaedia of Diseases of Children*, (1890) Fenger writes on Perityphlitis. He says that Fitz has proposed the title appendicitis. He notes that a case has been reported in a girl of seven weeks, says there was nothing typical in the course and that Morton insists that salines and enemata be employed in the early stages, that Pepper recommends citrate of magnesia at frequent intervals and that the diet in the acute stage must be liquid.

From Flint's *Practice of Medicine*, 17th Edition (1894):

The term typhlitis is applied to inflammation of the vermiform appendix as well as to caecitis. Perforation of the caecum is much more infrequent than of the appendix.

Keep in bed with ice bag to the abdomen. If constipated give calomel. Surgical treatment is indicated for urgent symptoms.

Deaver put out his *Treatise on Appendicitis* in 1896. There he advised removing the appendix as soon as the diagnosis has been made, and said it is difficult to differentiate between nephritic colic and appendicitis. A number of other renal and ureteral conditions are mentioned in the differential diagnosis.

When expectant treatment is the only alternative he recommended "the judicious administration of laxatives, restricted diet and alleviation of pain. Medical treatment consists chiefly in the administration of laxatives: "In most cases castor oil should be given." "I am perfectly familiar with the unfavorable opinion upon the advisability of the administration of laxatives in appendicitis . . . I do not hesitate to offer it as sound and rational therapeutics."

Beaten eggs, pancreatized milk or buttermilk were allowed.

In cases of chronic appendicitis the patient should eat sparingly and avoid all foods that will overload the bowels with residue.

In abscess it requires skillfull manipulation to remove the appendix without infecting the general peritoneal cavity.

The patient should be isolated after operation, giving no morphine and absolutely nothing by mouth for the first 4 hours, no food for the first 18 hours.

For the relief of pain asafotida suppositories or enemata.

A close observation of over 500 of his own operative cases forms the basic of these earnest convictions.

From the *American System of Practical Medicine*, 1898, for which the Edinburgh surgeon, W. F. McNutt, writes the Chapter on Appendicitis:

We do not believe that the word typhlitis is doomed to disappear and give place to the term appendicitis. On the contrary, we hope that in the near future we will be able to as readily and clearly differentiate between caecitis and appendicitis as we now diagnose bronchitis from pneumonia.

When boys arrive at the fighting, wrestling, climbing age they develop more cases of appendicitis than do girls of the same age.

Any occupation that produces violent contractions of abdominal muscles predisposes also to any infectious disease, including syphilis.

Constipation as a cause is much overestimated. Nothing is more certain than the influence of a previous attack in predisposing a person to appendicitis. Once a person has an attack, he is never safe while the appendix remains unless the lumen becomes obliterated, which it occasionally does from repeated attacks.

Reaction has set in against the belief that foreign bodies are the only cause. Some say only 4 or 5 per cent, Fowler that they are rarely the cause.

Blows, falls, lifting heavy weights cause a goodly number.

Inflammation of the caecum readily invades the appendix by extension.

Some, especially in England, attribute many cases to rheumatism and gout.

Varieties of Appendicitis are:

1. Catarrhal or medical appendicitis.
2. Mural or parietal appendicitis—may terminate in appendicitis obliterans.
3. Acute or subacute perforating appendicitis may properly be called surgical or suppurative appendicitis. Other forms may require surgical aid but this variety demands it.
4. Periappendicitis, circumscribed or general peritonitis without rupture of appendix.
5. Relapsing.
6. Recurrent.

It is a protean disease. Many cases do not fit accurately into any of these classes. The temperature is usually 101-2, sometimes subnormal. The cases of perforation that result from complete strangulation of the appendicular artery are free from pain until perforation has taken place.

It is only to those prone to be negligent in regard to current literature that appendicitis is an obscure disease. Not more than five per cent of the cases are difficult of diagnosis.

The writer has learned to reserve his diagnosis

in some cases of abdominal disease until he gets his hand into the cavity, and there are some which can not be decided then.

Pain may be over the anomalous position of the appendix.

In the first meeting of this Association, held at Charlotte in 1899, Dr. Chas. B. McAnally, of Madison, had a paper on "The Medical Treatment of Appendicitis." He gave calomel followed by salts, morphine, spirits of turpentine and warm applications.

"As we see no more than 5 per cent of our cases of appendicitis till the 3rd or 4th day" he concluded, "there is little chance for early operation."

In Park's *Surgery*, by American Authors, (1901) Maurice H. Richardson contributes the chapter on Appendicitis. He says the diagnosis is rightly regarded as easy; but at times it is impossible. Further that no more difficult question can arise than when to operate. He operates at once in all severe cases seen early unless there is some definite contraindication, also at any time unless the patient is certainly improving. He says nothing about purgation or pain relief.

In *Surgery by American Authors* (1901), Maurice H. Richardson gives his opinions:

Prognosis in a given case cannot be accurately determined even by the most experienced. An examination of the blood—white cell count—may have little bearing, at times be of great value. Pain is at first paroxysmal, later constant. The temperature is moderate. The pulse is a better index. Strangulation of Meckle's diverticulum is to be differentiated.

Best treatment in first few hours of disease is immediate operation. Also in all severe cases unless unmistakably improving, and in all cases in which it is clear that disease is limited to the appendix. The appendix should be removed whenever it is possible to do so without infecting the abdominal cavity. The author has used this method in 400 consecutive cases without a death.

The first volume of Hemmeter's *Diseases of the Intestines* (1902) is dedicated to Reginald Fitz and says Fitz's original contribution was published in *The American Journal of Medical Sciences* in 1886.

Hemmeter forbade food for 24 hours, later giving only albumen water. For severe pain 1/8th to 1/6th gr. morphine. He gave enemas and if they were unsuccessful, purges "even at the risk of aggravating the inflammation." "In chronic relapsing appendicitis", said he "it is always advisable to consult with an experienced surgeon". He advised operation in case the symptoms did not improve within two days.

From Hare's *Practice of Medicine* (1905):
In a case of acute appendicitis the first thing for

the physician to do is to call in a surgeon "as a consultant, not as an operator." He forbids all food and drink and purgatives, and says nothing should be given for pain unless it is very severe. By the end of 36 hours, if symptoms are not rapidly subsiding, he advises operation.

It is evident from the foregoing extracts and quotations derived from a really massive literature dealing with this disease, that the adjustment of the problems confronting the profession at that period awaited a clear recognition of the symptoms, and of the realization by the public generally of the importance of early surgical interference.

Many an ambitious young surgeon of those days suffered a devastating blight to his surgical reputation by having unloaded upon him a series of last-stage cases of appendicitis with resulting heavy morality rate.

It has been truly said that in scientific investigation, the solution of one problem uncovers others of like or greater complexity, and so the field of knowledge broadens far beyond an ever-expanding horizon. It is to the everlasting credit of our profession that we maintain a free interchange of scientific information; that, with us, nothing is allowed to interfere with the dissemination of knowledge of recently discovered facts and recently developed methods.

The modern surgeon operates against a high percentage of operative success. Less and less are baneful results attributed to the act of the Almighty and more and more to the doctor. The personal strain is greater, the responsibility for adequate provision against possible contingencies and the necessity for meticulous care in execution are ever present with us.

The profession owes a vast debt, not only to the illustrious men of medicine of the immediate and remote past whose legitimate legatees we are, but to the great advance during the last half century of related branches of science whose brilliant achievements have broadened our knowledge and provided means and instruments of precision wholly absent before. We are "debtors, therefore, both to the Greeks and to the Barbarians" for our progress, for all scientific knowledge is akin.

There is here no ground on which to base a superiority complex, or indulge ourselves in any personal delusions of grandeur. The spirit of our greatest scientists has always been one of humility. That great British surgeon, Lord Berkeley Moynihan, was fond of saying, "I have gathered a posie of other men's flowers; nothing but the thread that binds them is mine own."

Discussion

THE SECRETARY: Dr. Foy Robinson was called to Durham on account of a terrible automobile accident. He

called me on the phone to ask that I tell Dr. Gibbon and the meeting how sorry he is that he cannot be here to discuss this paper.

Later he supplied the following discussion:

DR. ROBERSON: Mr. President, gentlemen of the Tri-State Medical Association: I enjoyed Dr. Gibbon's paper immensely. In his usual charming and delightful way he has presented a picture of appendicitis as it was seen by surgeons of other years. These men spoke of typhlitis, para-typhlitis, peri-typhlitis etc. They were absolutely right—because the condition they saw had passed beyond what might be termed appendicitis and was never recognized by them as such, because the early symptoms of appendicitis as we know them today were not known to the men of that generation.

They called it indigestion, cramp colic etc., and even to day those same signs and symptoms are misinterpreted and typhlitis develops. After an appendix has ruptured appendicitis ceases to exist per se, complications and sequelae take charge. Appendicitis exists when the very mildest symptoms or signs first began—maybe in infancy—on through suppuration and gangrene; but when the appendix ruptures, or even before, complications and sequelae are too far-reaching to be classified as appendicitis. What I am attempting to bring out is that we should think of appendicitis only in terms, as the appendix itself is involved, from the very mildest to the most severe type, before rupture. One could expostulate, ad infinitum; on this subject alone, but let it go at that; beyond this stage the condition becomes far more grave and should no longer be called appendicitis.

Modern knowledge and methods make it possible to diagnose appendicitis when it is appendicitis. The men to whom Dr. Gibbon referred, accomplished though they were, saw typhlitis, not appendicitis. Let us hope that Dr. Gibbon's paper will so impress this group that we shall do all within our power to recognize and treat appendicitis while it is appendicitis and render typhlitis extinct. Thus the mortality will become practically nil.

And Dr. T. C. Bost, Charlotte, this:

DR. BOST: This subject, appendicitis, which Dr. Gibbon has so ably discussed is perhaps the most important which has been discussed in this meeting: first, because of the frequency of the disease; second, because health and life are so much at stake; third, because the disease is so easily cured if seen early and promptly dealt with surgically, while delay may and frequently does result in death.

It must be a profound sense of satisfaction to Dr. Gibbon to have lived and practiced surgery for the past half century, to have seen and to have contributed to the evolution of means of dealing with appendicitis, and to practice the art as it is done today as contrasted with the early days when there was so little knowledge of the disease and so uncertain was the outcome. In going through this long and trying evolutionary period and arriving at our present state of knowledge, Dr. Gibbon has had a vast experience over a long period of years and he has applied it in such a scientific way as to further our knowledge and assist materially in standardizing the surgical principles of appendicitis as we know them today.

As extensive as Dr. Gibbon's work has been in appendicitis, I might say that he has not yet removed my appendix, but several years ago he adequately dealt with my acutely inflamed gallbladder; and after his removal of this offending organ I made a prompt and perfect recovery and was soon back in the surgical field in friendly competition with this master-hand, and I hope that we

both will be able to keep this up for a long time without either having to again operate on the other.

FAVORABLE TYPES OF BRAIN TUMOR AND THE RESULTS OF THEIR OPERATIVE REMOVAL

(Gilbert Horrax, Boston, in *New England J. of Med.*, Feb.)

This study concerns the present status of 224 patients who were considered to have favorable brain tumors out of a total series of 400 verified tumors of all types.

These 224 may be classed as: Meningiomas, 80; acoustic neuromas, 33; pituitary adenomas, 30; gliomas (mostly cystic), 29; miscellaneous (angiomias, hemangiomas, cysts, colloid cysts of the third ventricle, craniopharyngiomas and pinealomas, cholesteatomas and unclassified tumors) 52.

Among the 224 favorable tumors there were 27 operative deaths, a majority of 12%. Of the 197 survivors, 10 have died subsequently, leaving a final figure of 187 patients who are living and whose tumors I believe have been wholly eradicated. Twenty-seven of these survivors have major disabilities or handicaps that prevent them from living useful lives. Thus 160 (71%) of the original 224 with favorable tumors, have survived for periods varying from 1 to 8 years and are leading useful lives with little or no functional loss.

The meningiomas are the most common of the favorable types of brain tumors. Acoustic neuromas, the second type of favorable growths, may almost always be recognized from the tinnitus and increasing deafness on one side, followed by numbness of the same side of the face, staggering, headaches and in the later stages failing vision due to choked disk. I always remove these tumors completely at the primary operation, mortality under 10%. The inevitable facial paralysis, this can be overcome largely by a spinofacial anastomosis.

Pituitary adenomas may be diagnosed by optic-nerve atrophy, partial or complete bitemporal hemianopsia and an enlarged sella turcica—mortality of 5%.

Benign gliomas are commoner in the cerebellum and most frequent in children. Intermittent bouts of headache and vomiting, and cerebellar signs and symptoms are as a rule outspoken.

THE SIGNIFICANCE OF THE TONSILS IN THE DEVELOPMENT OF THE CHILD

(A. D. Kaiser, Rochester, N. Y., in *J. A. M. A.* Oct. 5th)

About 50% of children are subjected to this procedure. It is our opinion that only some 20% of children possess tonsils which should be removed.

We have studied a group of 4,400 children, half of whom were subjected to tonsillectomy. The other half were advised to be operated upon, but for various reasons did not accept.

Our statistics are derived from a 10-year period of observation.

Sore throat or tonsillitis—38% of the 4,400 children had tonsillitis (at least two febrile attacks a year) during the first 7 years of life. In the 2,200 children operated upon the incidence of sore throat was decidedly less during the first 3 years, then increased in the next seven years; but the trend was decidedly downward. In the group in which the operation was not done, attacks of tonsillitis recurred with only slight decrease in frequency. The incidence of the common cold was the same for the two groups.

It seems probable that the removal of adenoids was of distinct benefit to the younger children who were subject to ear infections. The tonsils have no constant relation to infections in the ear.

Unnecessary Cancer Dissemination*

WRIGHT CLARKSON, M.D.—HILMAR SCHMIDT, M.D.—EDITH MILLER, M.D.
Petersburg, Virginia

WE ARE MINDFUL of the truth of the ancient adage, "To err is human"; still we wonder if physicians fully realize how frequently mistakes in handling cancer cases cause a needless loss of life. We should bear in mind the great truth spoken by Confucius, "To know what we know and to know what we do not know, that is wisdom."

It is impossible for any one physician to become fully capable in every branch of medicine and a physician who does not fully realize his limitations is indeed a dangerous practitioner.

In this presentation, there is no personal element. We are not trying to hurt anyone, but we want to bring to your attention, through a series of case reports, the gross errors that are frequently being made in the treatment of cancer. Everyone makes mistakes, but we should profit by these mistakes, and we hope that the errors shown here will help you to avoid similar errors in your work.

Somehow, physicians frequently forget the mechanics of cancer dissemination which, in reality, is quite similar to an infection. It begins locally and spreads through the circulating fluids of the body to distant and vital parts. We should keep this fact constantly before us whenever we attempt the examination or treatment of a lump or an ulcer that may possibly be malignant.

These reports must necessarily be very brief, but we hope that they will be sufficiently illustrative to make all of us fully cognizant of some needless errors.

The first case that we wish to discuss is that of a man who called at our office not long ago with a small elevated shiny white lesion on his chest. It was very hard, but the patient said it had caused him no discomfort and that it was not growing, so far as he could tell. When he first came to us everyone had left for the day except the clinical photographer. She made a photograph and gave the patient an appointment to see us the next morning. We heard nothing more about the case until five months later, when he came in for a roentgen study of his chest. This showed multiple sarcoma metastases throughout both lungs. On questioning the patient, we learned that his family physician, who had recently bought a high-frequency machine, had coagulated the lesion. Post-mortem examination showed that the tumor was originally encapsulated and it proved that the lung metastases were identical with the original lesion.

We should always remember that a tumor capsule is nature's protective measure and the enucleation of tumors or their partial destruction is dangerous therapy, yet these things are being done daily in physicians' offices throughout the country.

Our lantern-slides today show also three cases of mixed tumor of the parotid gland enucleated by three recent graduates in medicine in their respective offices. Two of these have already resulted in the death of the patients and the outcome of the third remains uncertain. All of our medical schools should establish a chair on oncology and pay more attention to the training of students in this subject.

Such errors are far too common in our profession. The group of cases here reported include gross errors made by recent graduates in medicine, by professors of several medical schools and by members of various state boards of medical examiners. A neurogenic sarcoma, for instance, is shown in this group. It was on the front of a woman's leg, and was enucleated in the office of a member of a State Board of Medical Examiners, with a prompt return of this very dangerous lesion.

We are showing metastases in the axilla, in the supraclavicular regions and, in fact, all over the body surface of a patient who a very few months ago happened to be visiting his wife, a patient of a professor in one of the foremost medical schools of this country. The professor, a specialist, had performed a very successful operation upon the wife and the husband happened to ask the doctor about a mole on his back. It had been there all of his life and had given him no trouble up to that time. The professor walked up to the dresser and picked up a string and tied it tightly about this pedunculated blue mole. The undertaker did the rest for the patient in about ninety days. The specialist did an excellent piece of work with the man's wife because he was working in his special field, but melanomas are something that he obviously knew nothing about.

Not long ago we saw a case of bone sarcoma, in which we advised immediate amputation, but another radiologist attempted to cure this case by irradiation. The patient died.

During the past year a prominent radiologist has been treating a skin cancer that involved the mandible. It is hard to understand this since, so far as we know, there is no possibility of curing by irradiation an epidermoid carcinoma in bone, and

*Presented to the meeting of the Tri-State Medical Association of the Carolinas and Virginia, held at Greensboro, February 24th and 25th.

surgery at a reasonably early stage gives these patients a chance for recovery.

On the other hand, a very fine surgeon removed a malignant wart on the back of a patient's hand three times, at about sixty-day intervals. The metacarpal bone finally became involved and the patient had to lose part of his hand. Irradiation proved that the lesion was quite radiosensitive and the patient has now been well for many years.

Perhaps there is no branch of medicine that requires such intensive training, such expensive equipment and so many years of experience as that which we call oncology. Merely to be a good surgeon or a good radiologist does not qualify one to deal with cancer.

Most of our states have now been successful in running out cancer quacks; but during the past few months we have had two patients with a history of having been treated with an arsenic paste at the hands of an old woman who has a widespread reputation for "curing cancer," according to the patients. One of these has succumbed with an osteomyelitis of the lower jaw, the other has needlessly lost the entire lower lip and part of the mandible.

For many years we have been stressing the fact that improper radium therapy is permitting more patients to die than good radium therapy is curing, and this is because only a very small percentage of these patients are being treated by qualified radiologists.

Improper treatment by radium of carcinoma of the cervix accounts for most of this mortality, but in this series we are showing a patient who lost his eye and eventually his life from the improper use of radium, and another patient who has lost his nose from the same cause.

We are showing a patient with a very large atrophied malignant scar on his cheek resulting from an x-ray burn at the hands of one of America's leading dermatologists; and a malignant bone tumor diagnosed as osteomyelitis by a general practitioner who had recently bought an x-ray machine. The tumor was operated upon on this diagnosis and curetted. The patient died.

Speaking of bone tumors, one must remember that not even the best radiologist can be absolutely positive in all cases and we believe that wherever a malignant bone tumor is suspected, a tourniquet should be placed on the extremity well above the tumor and a frozen section made of the growth. If it is found to be malignant, a second tourniquet should be applied above the first and the limb amputated between the two tourniquets. If this procedure were universally followed, we would save a very much larger percentage of the patients who have malignant bone tumors.

Unfortunately, one of the rarest things in med-

icine is a good surgical pathologist, and we are showing a large number of cases improperly diagnosed even after the tissue had been examined by hospital pathologists in various sections of several states. We venture to say that the pathologists in this country are not getting a square deal. Most of them are on salaries so small as to destroy their incentive to build.

The pathologist, however, is not always the cause of the wrong diagnosis, for frequently the biopsy is taken improperly. We have shown lantern-slides here to demonstrate the vast difference in the microscopic pathology by taking numerous biopsies on the same tumor at different levels. If the pathologist is to diagnose the nature of the lesion, you must be sure to submit a fair sample of the involved tissue.

It is impracticable to record here all of the cases that are shown by the lantern slides in this lecture. We want, however, to stress the importance of *intense irradiation five days every biopsy*. We will end with a case report that seems to us to illustrate the kind of problem that we are facing almost daily in our work.

The patient is a woman who went to see her family physician in June of 1940 because of excessive uterine hemorrhage. She was given hypodermic injections of a pituitary growth-stimulating hormone over a period of months, with a continuous increase instead of a cessation of the hemorrhage. On October 24th she was referred to a surgeon who coagulated her cervix *without taking tissue for a biopsy*. She returned to the same surgeon a month later, because she was still bleeding. At that time he made a biopsy and received report of a very malignant squamous-cell epithelioma. The patient was then referred to another surgeon who has some radium and this surgeon proceeded to give her radium therapy on three occasions at thirty-day intervals. The amount of each treatment was inadequate, and the radium therapy was spread over a too great length of time; so the tumor naturally became radioresistant and incurable.

We do not believe that we are going to get far in the reduction of the mortality rate from cancer as long as patients are being so mistreated.

We hope that you will take these case reports in the spirit in which they are given. No names will ever be called in these cases, for we realize that we too make errors. We want to repeat here that we are not trying to hurt anyone. We know that physicians are not fully aware of the seriousness of their errors in oncology, and we know that the only way to reduce the mortality from cancer is to analyze our mistakes and to profit by them.

Discussion

DR. BARKER: I have nothing to add, only to thank Dr. Parsons for his discussion.

DR. CLARKSON: I have nothing to say except to com-

pliment Dr. Barker on the very excellent work he is doing. I feel close to him as he was once associated with me. He is doing a marvelous piece of work in Roanoke. I want to compliment him for the good work he is doing. I wish we could build up a group of young men really specializing in this field. If we do that and get these cases referred to this group, we will make progress.

DR. P. B. PARSONS, Charlotte: The time is so short that I just want to say a hearty amen to both of these papers. I have greatly enjoyed hearing this very pertinent topic discussed with such frankness and such ability.

Just one point I'd like to bring up there in the treatment of superficial tumors and the possible treatment of deep tumors. I always try to get biopsies on the tissues. I have found it best to follow them through from that standpoint on the various types of basal-cell tumors, usually either basal-cell or squamous-cell is to be recognized.

It is as a lesson rather than as a reproach that these melancholy facts are recited. It is a life-saving matter; and often a matter of saving from months, even years, of such torture as to make welcome Death's coming to bring relief.

Such cases as have been presented here come within the experience of every surgeon and every radiologist who sees many patients. If all of us join with these essayists in reporting such experience, inevitably these tragic occurrences, these unnecessary deaths, will be reduced to a minimum.

SURVIVALS OF FIVE TO NINE YEARS OF PATIENTS TREATED FOR CANCER

(From Dept. of Cancer, *Med. Times*, July)

The New York State Committee of the American Society for the Control of Cancer concluded that knowledge that the physicians practicing in the communities of the State were able to diagnose cancer and to provide suitable treatment when the patient applied for examination before hopeless metastases had developed, would tend to relieve the defeatist attitude on the part of the profession as well as the laity. The first report, made in 1930, from the six active hospitals in Monroe County showed that 43 patients with cancer had survived the five-year period. The microscopic slides were studied by three pathologists, one from each of three hospitals, and all had concurred in the original diagnosis. The reports have been made annually since to a total of 365 cases.

This year we are reporting 81 additional cases, which brings the total number of five-year survivals to 446.

SUDDEN HEART DEATH

(P. W. Morgan, Emporia, in *Jl. Kansas Med. Soc.*, July)

Laymen suspect sudden death as a likelihood whenever any heart abnormality is diagnosed. The lay coroner does not hesitate to name heart disease as the cause of death when a sudden, unexpected death occurs; only 4% of all heart deaths are sudden. It is important that physicians be possessed of the facts on the subject. Cardiac sudden death though accounting for only 4% of heart deaths is the commonest cause of sudden death. Coronary sclerosis with heart pain in persons who have had coronary occlusion is the combination most frequently seen in sudden heart death. Up to 33% of these have died suddenly.

Sudden death in luetic aortitis is common up to 33%. Aortic stenosis is the only valvular abnormality in which sudden death is a threat.—11 to 14%.

Toxic myocarditis may cause sudden death. Rest during infections and in convalescence is valuable. All diag-

nistic criteria should be used to establish the fact that the "activity" of an infection is over before allowing patients up and about.

Non-penetrating wounds of the heart have been followed by sudden death in 21% of a reported series.

The definition of angina pectoris should include the phrase "Liable to die suddenly." There are therapeutic sudden deaths in heart disease.

COBRA VEN ANALGESIA IN SURGERY

(P. E. Craig, Coffeyville, Kan., in *Jl. Kansas Med.*, July)

Abdominal operations are ordinarily followed by considerable pain; when cobra venom was employed the total dosage and the number of injections of the opiates were greatly reduced.

Cobra venom exerted no unfavorable action on the bowel and paralytic ileus was not experienced in any of the abdominal operations reported.

Cobra neurotoxin when given to 38 surgical patients helped prevent and relieve postoperative pain. The full effect of the venom was manifested 48 to 72 hours after its use in cases prepared two or three days for surgery. Increased dosage on the day of operation proved effective inasmuch as fewer narcotic injections were required. The venom is synergic with the opiates and enhances their analgesic properties without making the patient stupid. As a whole, those patients who received injections of venom were brighter, slept better, suffered less from gas pains and retained better appetites than those who had been narcotized for two or three days following surgery.

Cobra neurotoxin has cumulative action which lasts several days after injections are discontinued, thereby extending the postoperative analgesia. Its recipient does not complain of blurred vision.

Cobra venom was given to 16 patients three days preoperatively, to 14 patients one day prior to surgery and to eight patients on the day of operation. In all three groups the injections were continued for two to three days after operation.

In Group I—Eight of the 16 needed narcotics for the relief of pain.

In Group II—Ten of the 14 required supplemental narcotic analgesia.

In Group III—Each of the eight was given opiates for the control of pain; but in three instances the dosage needed was half the amount usually given.

Cobra venom, although slower in its action than the narcotics, produces a sustained analgesia after the third or fourth injection.

It does not inhibit intestinal peristalsis or narrow the field of vision. It is not habit-forming and does not depress the patient—on the contrary it improves the psyche and stimulates the appetite.

It is safe and highly effective when given in therapeutic doses.

The writer believes that cobra venom is a valuable addition to the armamentarium of drugs used by the surgeon in his office and hospital practice.

SNUFF-TAKING REVIVAL

(Editorial in *Med. Times*, July)

The tobacco shortage in England has resulted in a resort to snuff. The snuff-sniffing habit is encouraged by three factors: cigarettes are scarce; there are many regulations against smoking, as in airplane and munitions factories; the blackout prohibits outside lights.

Shops for the sale of snuff are increasing in number daily, with perfumed brands for women.

CO₂ Culture Method in the Diagnosis of Gonorrhea and Undulant Fever

J. M. FEDER, M.D., Anderson, South Carolina

Director of Laboratories, Anderson County Hospital

INFORMATION gained by detailed investigation has been sufficiently impressive to warrant the belief that inadequate use is being made of cultural methods in the diagnosis of gonorrhea and undulant fever.

The failure of routine laboratory workers to make these valuable diagnostic aids more generally available can be explained on the ground that to most of these the involved technical procedures previously described have appeared almost beyond the scope of the average laboratory. Lack of a satisfactory, commercially available outfit for production of a suitable carbon dioxide atmosphere has also been a factor contributing to this neglect.

The necessity of making cultures in cases of suspected gonorrhea when slide smears are negative has been amply proven. Leahy and Carpenter¹ report that cultural methods result in the discovery of 10 per cent more cases of gonorrhea than are discovered by slide examinations alone. They also report that 15 per cent more cultures were positive when an atmosphere reinforced by 10 per cent carbon dioxide was employed.

TECHNIC FOR PREPARING MEDIA AND IDENTIFYING THE GONOCOCCUS

Bacto-Proteose No. 3 Agar and Bacto-Hemoglobin prepared by Difco Laboratories were used exclusively in our work. By means of these an entirely satisfactory chocolate agar plate can be prepared.

Nine grams of Bacto-Proteose Agar is weighed and suspended in 100 c.c. of distilled water and two grams of Bacto-Hemoglobin is dissolved at the same time in 100 c.c. of distilled water at 50° C. When solution is nearly complete, filter through moistened gauze to remove coarse particles. Sterilize both flasks at 15 pounds pressure for 20 minutes. Remove from autoclave and cool both flasks to between 50 and 60° C. Mix under aseptic conditions and pour into petri dishes, being careful not to produce air bubbles.

CULTURE OF SPECIMEN

Swabs are made from the suspected area and at once immersed in test-tubes containing about 1 c.c. of sterile broth (Proteose-Peptone is very satisfactory). It is essential that they be kept moist. Drying will kill the gonococcus very rapidly. Plates are streaked with these moist swabs and placed in the CO₂ jar under 10 per cent carbon dioxide atmosphere and incubated 36 to 48 hours at usual bacteriological incubator temperature.

DIFFERENTIAL IDENTIFICATION OF COLONIES

The gonococcus grows on chocolate agar in typical, convex, transparent colonies 1 to 3 mm. in diameter having undulating edges. Inspection alone is not sufficiently accurate to warrant its use especially in the presence of mixed bacterial growths nearly always present in chronic gonorrhea.

The plate should be flooded with an oxydase reagent to further facilitate identification. This is carried out by making a 1 per cent aqueous solution of dimethyl-paraphenylene-diamine-hydrochloride obtainable from Eastman Kodak Company, Rochester, N. Y. After flooding, the plate is gently rotated and an excess of fluid poured off. Observations should be made every few minutes and specimens should not be reported as negative until fifteen minutes of such study has discovered no organisms. Subcultures should be made on carbohydrate media (dextrose, maltose, saccharose and lactose). Positive oxydase reactions are noted by a change of color of the colonies under investigation from pink through various stages to metallic black. It is essential that subcultures be made on the carbohydrates as soon as a colony turns pink. If one waits until it turns black the cells are usually dead and will not grow.

CONFIRMATION OF IDENTITY OF ORGANISMS

A gram-stained slide in the hands of a competent observer is usually sufficient for routine purposes. A gram-negative diplococcus or diplobacillus is reported by Thompson that has all of the cultural characteristics of the gonococcus and can be differentiated only by its carbohydrate reaction.² The minimum requirement from a medico-legal standpoint is in our opinion the isolation of organisms that ferment dextrose, as shown by the following chart, and that will not grow upon plain agar. It is to be noted that faint growths of some strains of the gonococcus can be obtained on plain agar. It is *highly essential that the subcultures also be exposed to 10 per cent dioxide atmosphere.*

Carbohydrate Cultural Behavior of Some of the Commoner Gram-Negative Diplococci (Acid Formation)

Microorganism	Dextrose	Maltose	Sacchrose	Lactose
N. gonorrhea	Positive	Negative	Negative	Negative
N. intracellularis	Positive	Positive	Negative	Negative
N. catarrhalis	Negative	Negative	Negative	Negative
N. sicca	Positive	Positive	Positive	Negative

BRUCellosis, TECHNIC FOR PREPARING MEDIA FOR MAKING CULTURES FROM BLOOD AND SUBCULTURES

The procedure recommended by Huddleson³ for preparing a suitable medium follows:

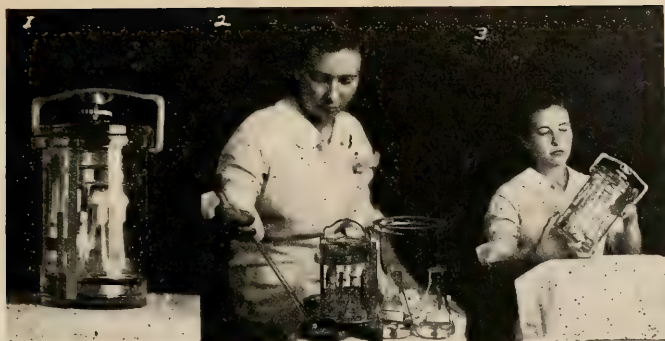


Figure 1

1. The loaded, sealed jar ready for incubation.
2. Rack containing petri dishes, flasks for blood cultures and test-tubes for subcultures. Technician is placing acid and alkali in respective compartments of mixing tray. (Acid is 1-30 dilution of concentrated sulphuric acid and alkali is an 8.4 per cent solution of sodium bicarbonate. Each c.c. of this will liberate 22.4 c.c. of carbon dioxide)
3. After the medium racks have been loaded and the acid and alkali placed, the jar is tightly sealed and tilted gently to mix the solution, thus liberating the gas.

Bacto-Tryptose	2.0 gram
Sodium Chloride	0.5 gram
Sodium Citrate	1.0 gram
Distilled Water to	100.0 c.c.

This broth is distributed into 50-c.c. cotton-stoppered flasks, allowing 20 c.c. to each flask. The flasks are inoculated by drawing 5 c.c. of blood from the patient and introducing it directly into the flask. One may use the rubber-capped vials recommended by Huddleson if CO₂ is placed directly into them. We have found that the gas will not enter if one places a cotton-protected needle through the cap while incubating. In view of our desire to adapt the technic to the container described, cotton-plugged flasks have been substituted for the capped bottles described by the author. (3a.)

The vials are incubated at 37° C. for four days and subcultures are then made upon petri dishes or slants of Tryptose Agar. These subcultures are, of course, incubated in the CO₂ jar. Recent advice seems to point to the desirability of having a 25 per cent gas atmosphere rather than a 10 per cent when *Brucella* is being grown.

CULTURAL DIFFERENTIATION OF THE VARIOUS STRAINS OF BRUCELLA

Huddleson has established the differentiation of *Brucella* types by their behavior in the presence of certain bacteriostatic dyes. Bacto-Tryptose Agar can be employed very effectively as a base for the thionin and basic fuchsin media used by Huddleson, but the dye content of these media must be less than that employed for liver infusion agar. Thionin (C. 1.920) is employed in 1/200,000 dilu-

tion (0.5 c.c. 1 per cent solution of Bacto-Thionin per liter), and basic fuchsin in 1/100,000 dilution (dissolve 0.1 gram Bacto-Basic Fuchsin (DF-4) in 100 c.c. distilled water at 70° C., add 10 c.c. per liter of medium). The plates should be inoculated within 24 hours after pouring, as the dyes become reduced in the medium on standing. The bacteriostatic action of the dyes in the concentration in tryptose agar is in every way comparable with that previously described by Dr. Huddleson. Upon thionin tryptose agar, *Brucella melitensis* and *B. suis* will grow, while *B. abortus* is inhibited; upon basic fuchsin tryptose agar, *B. melitensis* and *B. abortus* develop and *B. suis* is inhibited. For differentiation of the *Brucella* types on the basis of hydrogen sulfide production it is recommended that Bacto-Tryptose Agar be dissolved in a fresh liver infusion prepared from ¼ pound fresh liver per liter of distilled water. Differentiation of the three *Brucella* species by means of their hydrogen sulfide production is not clearly defined when distilled water alone is used in preparing the medium. For a more complete discussion of Brucellosis reference should be made to Dr. Huddleson's text, "Brucellosis in Man and Animals."

DESCRIPTION AND MECHANIZATION OF STANDARDIZED CO₂ JAR

Our search for a suitable device for this purpose started several years ago and in January, 1940, a preliminary description was presented.⁴ Since that time, further improvements have been made until a rather versatile container has been devised, possessing sufficient flexibility to meet most routine laboratory requirements.

The appliance consists essentially of two parts:

1. An ordinary screw top museum jar.
2. A rack made of acid-resisting metal and constructed along lines that will snugly fit container.

The model made by us consists of two shelves at top fitted to accommodate two ordinary petri dishes. Around the mid portion of the rack, a metal band has been placed bearing clips to which test-tubes can be fastened. We have included six clips of this type. Two inset clamps on perforated floor of appliance snugly support two 50 c.c. flasks. The petri dishes are used with chocolate agar for culture of the gonococcus and the test-tubes containing suitable carbohydrate media as shown in above chart are used to determine the fermentation reaction of colonies isolated from the plates.

The flasks are used for blood cultures using technic described above and both plates and tubes can be used for their subculture and group identification.

A sliding shelf, divided in the center, has been placed immediately beneath the flooring. When medium containers have been loaded, this shelf is withdrawn, an amount of sodium bicarbonate solution sufficient* to produce the required CO_2 volume is placed in one compartment, in the other an equal amount of 1-30 dilution of concentrated sulphuric acid is introduced. The shelf is replaced and the rack introduced into the jar. After sealing the lid, the two solutions are mixed by gentle rotation. Incubation is then carried out in the usual manner.

SUMMARY

1. A standardized, simplified technic is presented for cultural identification of gonococcus and Brucella in a carbon-dioxide atmosphere.
2. Bacteriological elaboration has been purposefully eliminated as this presentation deals essentially and primarily with an appliance for aiding in the work rather than the fine points of differential diagnosis encountered after growth has taken place.
3. By using the methods outlined, no difficulty should be encountered in growing and identifying the organisms under discussion by any clinical laboratory, regardless of its size.

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*Dr. Luther Thompson of Mayo Clinic has shown that each c.c. of 8.4 per cent sodium bicarbonate solution will yield 22.4 c.c. of carbon dioxide when treated with an equal amount of 1-30 concentrated sulphuric acid. Making use of this formula, we have found that the museum jar has a capacity of 2500 c.c. In view of the fact that extreme accuracy in volume is not required and expediency favors dealing in round numbers, we use 10 c.c. of each solution for culturing for gonococcus infections. This gives an atmosphere approximating 10 per cent, sufficiently close for practical purposes. In view of the recommendation that Brucella grows best in a 25 per cent replacement, we use 25 c.c. of each solution when that organism is being sought.

Experimental work was carried out with tubes, flasks and petri dishes, using lime water as an indicator and the evidence afforded conclusively demonstrated the free passage of carbon dioxide into the containers.

Footnote 1.—Acknowledgement is hereby made of the work of Dr. Luther Thompson of Mayo Clinic and Dr. R. S. Spray of the University of West Virginia. The device described is built largely upon the foundation of their original investigation without which it could not have been possible.

Footnote 2.—We wish to express our gratitude to the Difco Laboratories of Detroit, Michigan, for their friendly counsel and also for supplying the several items of culture media in carrying out this work.

ELECTRO-SHOCK THERAPY

(J. L. Fetterman, Cleveland, in *Ohio State Med. J.*, July)

At the meeting of the American Psychiatric Association held in Richmond in May considerable attention was devoted to the new method of treating certain types of mental disease by inducing coma and convulsions through electricity.

The electro-shock method is a step forward in the therapeutic use of coma and convulsions for the relief of mental disease. In principle and results it resembles metrazol.

As a rule, an alternating current delivering a voltage of between 80 and 200 volts is applied for a time interval of 0.1 to 0.5 of a second. Such "treatments" are given two to three times a week in a series of six to 12 coma reactions.

The results of treatment have been, in the main, satisfactory. The severe melancholias have responded well. The consensus was that this method had a remarkable value in the affective illnesses. As regards schizophrenia, it might bring about an improvement in the early cases, but there was doubt about its value in the more chronic cases. Several psychiatrists had had a patient with schizophrenia of years' standing "recovered" after a series of 12 or so such treatments. The complications have been decidedly less than those with the previous shock methods.

The freedom from discomfort is such that most patients accept the treatment willingly.

FALLACIES IN MORTALITY REPORTS.—It must be pointed out that part of the difference in the total life expectancy in different countries is due to the methods of birth reporting. Since immediate registration of birth is not required in some countries, an infant dying during the first few weeks of life may not become counted as a live birth. —H. G. Hadley in *Jl of Med.*

Sudden Death From Natural Causes***

E. B. SAYE, M.D., Spartanburg, South Carolina

THE END of life may come with startling suddenness, in any one of the seven ages allowed to man¹; may come during convalescence from, or at the very inception of, serious illness; and may even come to one in apparent health, without warning symptom and without clinical sign that could easily be detected. Such catastrophe, we call *sudden death from natural causes*, if not produced by suicidal or homicidal effort, and if it has not resulted from the introduction of extraneous poison or from accident. It will be understood, I am sure, that I apply the word *death* only to the complete cessation of the *human* vital functions. For I trust that you may share with me the conviction long ago voiced by the psalmist, 'My flesh and my heart faileth; but God is the strength of my heart, and my portion forever.'²

The precise mechanism of death from any cause remains unfathomed. Physicians regularly certify the causes of death, implying only that pathological conditions which they believe to be sufficient to account for the fact of death were present in their patients. It is the purpose of this paper to review the *post-mortem* findings that are most frequent in cases of sudden death from natural causes, and to comment upon a few that may be perplexing.

It is generally accepted that thorough autopsies, made by competent examiners, are desirable, not only to improve mortality statistics, but also continually to increase the diagnostic acumen of the clinician. The autopsy worth while is more than technique; it is the translation into practice of an acquaintance both with pathological processes and with the clinical aspects of medicine. In cases of sudden death, autopsies are almost indispensable. They may serve to remove, although sometimes to confirm, the suspicion of foul play. Whether an accident, such as a fall, precipitated fatal illness or was itself the result of internal disease, may sometimes be determined. Questions of compensation for workmen, or of the extent of insurance liability, may be affected by the outcome of the examination. Every practicing pathologist has records of examinations that have helped to solve each of these problems for families, insurance companies, or courts of law.

The postmortem is seldom an easy method of diagnosis. The establishment of new disease en-

titles has increased the responsibility. The want of a reliable history of the last illness is an occasional handicap. Chemical analyses of the blood, useful in the study of the living patient, are unprofitable when applied to the cadaver. Microscopic investigation is sometimes essential. There are, moreover, diseases that leave no characteristic structural changes, either gross or microscopic. Such clinical conceptions as shock and paralytic ileus can never be verified by *post-mortem* appearances. In a small proportion of cases, no matter how thorough the investigation, the cause of death will have to be recorded as undetermined.

Many instances have been reported of sudden death from various causes, some of them unusual or rare. There is general agreement as to what conditions are ordinarily responsible, although opinion varies as to the order and frequency of their occurrence. It is useful for the practitioner to bear in mind the lesions commonly found, since it is he who is summoned first when death impends or when it has occurred unexpectedly.

COMMON CAUSES OF SUDDEN DEATH

In Adults, the usual causes of sudden death (crime, accidents and anesthesia excluded) are: acute cardiac failure, often associated with disease of the coronary arteries; massive visceral hemorrhage, notably that from a ruptured aneurysm of the aorta or from a cavity in a tuberculous lung; asphyxia from an obstructive lesion of the upper part of the respiratory passages; pneumonia; and, if the postoperative state be included, pulmonary embolism and peritonitis.

In Children, acute infectious diseases, particularly of the respiratory organs; intracranial hemorrhage; asphyxia from obstruction of some portion of the respiratory tract; and visceral hemorrhages in the newborn.

The main deductions in this paper are based upon data which I have obtained, during the past 10 years, from the examination of 26 adults and 19 children who had died unexpectedly. The 45 cases are taken from the records of 548 consecutive autopsies which were made at the Macon (Georgia) Hospital and at the Spartanburg (S. C.) General Hospital. The series comprises: 371 white persons, and 177 negroes; 346 men and boys, and 212 women and girls; 413 persons more than 10 years old, and 145 children in the first decade of life. The analysis includes a relatively large proportion of cases in infancy and early child-

*From the Pathological Laboratory, Spartanburg General Hospital, Spartanburg, S. C.

***Read before the South Carolina Medical Association, Greenville, S. C., April 16th, 1941

hood. The results are set forth in Table I. Whenever, reference is made to these cases, the adult group will be called Group A, and the childhood group, Group C.

In the 26 adults, the principal lesions involved: the circulatory system in 16 instances, of which 8 were of cerebral hemorrhage, and 8 diseases of the heart or aorta; the lungs or adjacent mediastinal tissues, in 4; the digestive organs, in 3; the reproductive organs, in 2; and the brain, without conspicuous alteration of the bloodvessels, in but one instance.

That these results accord essentially with those of other workers is evinced by two recent publications; one, from a neighbor institution; and the other, from England.

Pund,³ of the University of Georgia, found that, in the cases of 105 adults who had died suddenly, the causes of death were: diseases of the circulatory organs, 75 times, six of which were of hemorrhage into the brain or meninges; pulmonary diseases, 21; brain tumor, 1; ruptured tubal pregnancy, 1; and other or unknown causes, 7 times.

Bedford⁴ reviewed the *post-mortem* diagnoses in the cases of 198 persons (all but 6 of them beyond the first decade of life) who were already dead when they arrived at the Leeds General Infirmary. The principal lesions were found in the following organs: heart and aorta, 144 times, with 22 instances of aneurysm of the aorta among the 144; organs of respiration, 19; region of the brain, 15; digestive organs, 4; urinary bladder, 1; and demonstrable lesion in no organ, 15 times.

Heart failure stands preëminent among the causes of sudden death. In the majority of cases atheromatous or sclerotic narrowing of the coronary arteries may be demonstrated, often with a branch occluded by a thrombus, and usually with recent or older areas of infarction, or other secondary changes, in the myocardium. Coronary thrombosis was the cause of death of 5 of the 26 adults in Group A, with hemopericardium from rupture of a ventricle in 3 of the five. Nathanson⁵ found coronary thrombosis in 39 of 142 persons who had died suddenly of coronary artery disease, and rupture of the heart in 7 of the 39. He concluded that the mechanism of death from coronary artery disease is usually physiologic rather than structural. According to Levine,⁶ besides rupture of the heart or aorta, 3 intrinsic cardiac conditions can account for instantaneous death: complete heart block, ventricular fibrillation, and very rarely, cardiac standstill, which phenomenon may possibly be the manifestation of an overactive carotid sinus reflex. Ruptured aortic aneurysm explained 2 of the 16 deaths from cardiovascular causes in Group A. Except for the aneu-

rysm cases, evidence of syphilis was noted only once. Hamman⁷, who based his opinion upon the combined statistics from several sources, thought that syphilis of the aorta occurred in 20 per cent of all cases of sudden death. Chronic valvular disease probably owes its seriousness mainly to the accompanying myocardial impairment. The single case in Group A attributed to valvular disease was one of aortic stenosis, attended also with sclerosis of the aorta and coronary arteries. Death was sudden in 6 of Cabot's⁸ 28 cases of aortic stenosis. Congestive heart failures should not, I believe, find place in any tabulation of sudden deaths. They represent the gradual, even though rapid, development of imbalance between the systemic and the pulmonary circulation, and are the mode of termination, not only of some cardiac diseases, but of other illnesses as well.

Hemorrhage commands a foremost position in every statistical study of the causes of sudden death. It was observed in 18 of the 26 cases in Group A; 8 times, in the brain; 5, in diseases affecting the cardiovascular organs; twice, in gastrointestinal viscera; twice, in the uterus; and once, in a tuberculous lung.

Cerebral hemorrhage, it is generally believed seldom causes sudden death. Such was Osler's⁹ opinion. Lambert¹⁰ said 'Sudden death from apoplexy is rare indeed.' However, in 29 to 42 cases of cerebral hemorrhage summarized by Pieczarkowski,¹¹ death befell instantaneously. The outcome was rapidly fatal in the 8 cases in Group A; in 4 of these, massive bleeding into a lateral ventricle had disrupted the contiguous cerebral tissues.

Lobar pneumonia, with certain atypical features, is illustrated by one case in Group A. A negro laborer, 61 years of age, able to be at work in the afternoon, entered the Macon Hospital, comatose, late in the evening, and died soon after midnight, of what the resident physician suspected to be an apoplectic stroke. The ignorant relatives who supplied the history held the groundless belief that the man had been poisoned. Well advanced consolidation of a lobe of one lung was revealed at autopsy. Canavan¹² found lobar pneumonia to be the sole cause of death in several cases that had been diagnosed as cerebral hemorrhage, and emphasized the fact that pneumonia might simulate apoplexy in onset and symptoms. According to Osler,¹³ sudden death from lobar pneumonia occurs most commonly in the stage of gray hepatization.

The restrictive title of this paper forbids full consideration of a few conditions that may speedily bring about death. One of these, massive *pulmonary embolism*, it was stated by Crawford and Mohler¹⁴, usually causes death in less than 15 minutes. The lesion often follows thrombophlebitis

of a vein in the pelvis or leg, which disease is itself usually secondary to surgical operation upon the abdomen, to childbirth, or to local trauma.

In acute peritonitis, Bedford⁴ has reminded us, death may ensue almost without warning.

Alcoholism is by no means a negligible direct cause of death. Apart from the contribution it makes to suicide, homicide and accidental death, the mortality rate from alcoholism throughout the registration area of the Nation was 2 per 100,000 in 1938, the lowest figure since 1921. Assistant Surgeon General Kolb,¹⁵ of the U. S. Public Health Service, said, 'It is well known that the number of recorded deaths is much lower than the actual number due to this cause'. In the U. S. Army, in 1939, of 51 officers and enlisted men who died in the States suddenly from other than accidental causes (The mean average daily strength, that is, population was 141,523), upon all of whom autopsies were made, acute alcoholism was assigned as the cause of death 4 times.¹⁶

Occasional accounts of sudden death from analgesics,¹⁷ or from anesthetics given by skilled hands,¹⁸ remind us of the vigilant care that is necessary in order to minimize the ever-present danger of anesthesia.

CHILDHOOD DEATHS

In early life, sudden death is produced by factors different from those which bring it about in later years. With the exception of infrequent serious malformations of the heart, and of myocarditis induced by such agents as the diphtheria toxin, lesions of the heart are uncommon. Hemorrhages in children are of a different order from the gross ruptures of large vessels seen in adults. Death may occur, especially in the early months of life, from apparently mild illness; and the marks of disease *post-mortem* may be slight and vague.

The principal lesions noted at autopsy in the 19 cases in Group C were the following: pneumonia, 5 times, four of which were of the bronchial variety; intracranial hemorrhage, 4 times; asphyxia, 2, one of which was from a retropharyngeal abscess; diphtheria, 2; congenital hydrocephalus, 2; meningitis, also with aspirated vomitus in the lungs, 1; spontaneous intraabdominal hemorrhage, 1; and, in 2 instances, undetermined.

There is a paucity of reports concerned solely with the post-mortem findings in cases of sudden death in childhood; the subject yet offers a ripe field for inquiry. Summaries of recent statistics by Polish, Canadian and English investigators may be offered for comparison with the data just presented.

Pieczkowski¹¹ analyzed 148 cases of sudden death in children whose ages ranged from birth to 14 years. He found, by *post-mortem* examination,

causes of fatality in the following organs: respiratory organs, 66 times; alimentary viscera, 18; both respiratory and digestive structures, 27 times; generalized infectious diseases, 16 circulatory organs, 6 times; brain and meninges, 6; and other organs, or undetermined, 9 times.

The report of Goldbloom and Wiglesworth,¹⁹ who examined at autopsy, 30 children two years old or younger, may be epitomized thus: pneumonic changes, 21; asphyxia from aspirated milk, 2; intracranial hemorrhage, 2; enteritis, 1; appendicitis, 1; other causes, 3.

Simpson²⁰ gave as the main *post-mortem* diagnoses, in the cases of 12 infants who had died suddenly, the following: bronchopneumonia, 3 times; asphyxia, 2—one of which was from inhalation of vomitus; intracranial hemorrhage, 1; enteritis, 1; acute tuberculosis, 1; atresia of ureters, 1; undetermined cause, 3 times.

Respiratory tract: Infection and obstructive lesions of the respiratory organs exceed other causes of sudden death in children. Farber²¹ has called attention to the hemolytic streptococcus as a cause of fulminating infections in the young. He encountered a large number of cases in which the patient was said to have been perfectly well until fatal illness set in. At autopsy, early bronchopneumonia and edema of some of the nerve tissues were found.

Aspiration of food or vomitus by a weakened infant may be immediately fatal.

Diphtheria, notwithstanding the effort that has been made to eradicate it, continues to exact a toll of young life. Two deaths from diphtheria are recorded in Group C.

Another impressive case in the Childhood Group is that of the infant whose asphyxial death resulted from the presence of a large retropharyngeal abscess.

Next in importance to the group of respiratory affections is that of hemorrhage. Four instances of *intracranial hemorrhage* are entered in Group C, all of which had probably originated from tears of inelastic structures incurred during delivery. Soon after birth hemorrhages, other than intracranial, may occasion loss of life. These, designated by Holt²² as *visceral hemorrhages in the newly born*, are the spontaneous leakages of blood which occur typically in some of the intraabdominal and retroperitoneal organs and tissues. They seem to depend upon congenital instability of the bloodvessels, therein differing from *hemorrhagic disease of the newborn*, which disease is characterized, Johnson²³ has said, by a deficiency of prothrombin in the blood coupled with a lack of vitamin K.

Trivial factors seem to engender death more easily in childhood than in later life. Koppisch²⁴ has reported the case of a 6-year-old child, with

TABLE I.—AUTOPSY DIAGNOSES IN

ORGAN CHIEFLY INVOLVED	Case Number	Age	Race	Sex	Principal Lesion
<i>ADULT GROUP</i>					
<i>Heart and Aorta (8 Cases)</i>	1	56	White	Man	Thrombosis of coronary artery Left descending
	2	55	White	Man	Thrombosis of coronary artery Left descending
	3	54	White	Man	Hemorrhage from ruptured coronary artery
	4	52	Negro	Man	Hemorrhage from ruptured coronary artery
	5	54	White	Man	Hemorrhage from ruptured coronary artery
	6	26	Negro	Man	Hemorrhage from ruptured aneurysm of aorta
	7	47	Negro	Man	Hemorrhage from ruptured dissecting aneurysm of aorta
	8	70	White	Man	Stenosis of aortic valve
<i>Brain (9 Cases)</i>	9	80	White	Man	Hemorrhage, cerebral
	10	64	White	Man	Hemorrhage, cerebral
	11	45	White	Woman	Hemorrhage, cerebral
	12	53	Negro	Man	Hemorrhage, cerebral
	13	50	Negro	Man	Hemorrhage, cerebral
	14	37	Negro	Woman	Hemorrhage, cerebral
	15	65	Negro	Man	Hemorrhage, cerebral
	16	51	White	Man	Hemorrhage, cerebral
<i>Lungs & Mediastinum (4 Cases)</i>	17	16	White	Woman	Tumor of Brain
	18	61	Negro	Man	Lobar pneumonia
	19	62	White	Man	Bronchopneumonia
	20	35	Negro	Man	Acute suppurative mediastinitis and pericarditis
	21	26	Negro	Man	Hemorrhage, massive pulmonary
<i>Stomach, Esophagus, & Pancreas (3 Cases)</i>	22	43	White	Man	Perforated gastric ulcer
	23	37	Negro	Woman	Hemorrhage from ruptured varicose esophageal veins
	24	30	White	Man	Acute hemorrhagic pancreatitis
<i>Uterus (2 Cases)</i>	25	38	Negro	Woman	Hemorrhage from abruptio placentae
	26	22	White	Woman	Hemorrhage from rupture of uterus
<i>CHILDHOOD GROUP</i>					
	27	2 mo.	White	Girl	Hemorrhage, intracranial
	28	1 day	Negro	Boy	Hemorrhage, intracranial
	29	1 mo.	Negro	Girl	Hemorrhage, intracranial

45 CASES OF SUDDEN DEATH (*) (**)

<i>Site of Principal Lesion</i>	<i>Associated Lesions</i>	<i>Comment</i>	<i>ORGAN SYSTEM PRIMARILY INVOLVED</i>
(26 Cases)			
branch	Recent infarct of myocardium	None	
branch	Old myocardial infarcts. Sclerosis of aorta, and other branches of coronary artery	None	
L. descending branch	Recent infarct of myocardium	None	
Right branch	Syphilis and atheroma of aorta	Syphilis complicating	
Right branch (intraaortic)	Hemopericardium	None	
Descending aorta	Massive intraabdominal hemorrhage	Syphilis	
Thoracic aorta	Mediastinal hemorrhage	Syphilis	
Aortic valve	Sclerosis and calcification of aorta. Sclerosis of coronary arteries	None	<i>Circulatory (16 Cases)</i>
Region of left basal ganglia	Sclerosis of aorta and cerebral arteries	None	
Region of L. basal ganglia	Atheroma and sclerosis of cerebral arteries	None	
L. lenticulostriate artery	Sclerosis of aorta and cerebral arteries	None	
Region of right basal ganglia	Generalized arteriosclerosis. Nephrosclerosis	None	
Left lateral ventricle	Atheroma and sclerosis of cerebral arteries	Massive hemorrhage	
Right lateral ventricle	Sclerosis of cerebral arteries	Massive hemorrhage	
Rt. lateral ventricle	Sclerosis of aorta and cerebral arteries	Massive hemorrhage	
Rt. lateral ventricle	Atheroma and sclerosis of cerebral arteries	Massive hemorrhage	
Left cerebellar hemisphere	None	Medulloblastoma	<i>Nervous (1 Case)</i>
Lower lobe, right lung	Sclerosis and atheroma of aorta	Gray hepatization	
Middle and lower lobes, rt. lung (lobar distribution)	None remarkable	Recent attack of influenza	<i>Respiratory (4 Cases)</i>
Neck, mediastinum, pericardium	Tonsillitis (Vincent's organisms demonstrated)	Ambulant few hrs. before death	
Upper lobe, right lung	Chronic pulmonary tuberculosis	None	
Lesser curvature of stomach prepyloric	Early acute peritonitis	None	
Gastro-esophageal region	Atrophic cirrhosis of liver	None	
Pancreas	Necrosis and hemorrhage in pancreas. No fat necrosis	Alcoholic history	<i>Gastrointestinal (3 Cases)</i>
Uterus	Extreme anemia	Massive intrauterine hematoma	<i>Genital (2 Cases)</i>
Scar of previous cesarean section	Extreme anemia	Intraabdominal hematoma	
(19 Cases)			
Diffuse meningial	Partial atelectasis of lungs	Recent, and old bleeding	
Region of falx cerebri	None	Recent hemorrhage	
Diffuse meningial	Hemorrhages in region of cardiac interventricular septum, L. kidney, and pericardium. Partial atelectasis of lungs	Recent hemorrhage	

ORGAN CHIEFLY INVOLVED	Case Number	Age	Race	Sex	Principal Lesion
Intracranial Structures (7 Cases)	30	26 hrs.	White	Girl	Hemorrhage, intracranial
	31	4 mo.	Negro	Boy	Hydrocephalus, internal
	32	11 mo.	White	Boy	Hydrocephalus, Rt. internal
	33	6 wk.	White	Girl	Acute suppurative meningo- encephalitis (pneumococcus)
Lungs, Larynx, and Retropharynx (9 Cases)	34	15 mo.	Negro	Girl	Bronchopneumonia
	35	1 mo.	White	Boy	Bronchopneumonia
	36	8 days	White	Boy	Bronchopneumonia
	37	5 days	Negro	Boy	Bronchopneumonia
	38	5 yrs.	Negro	Girl	Lobar pneumonia
	39	4 yrs.	White	Girl	Diphtheria
	40	18 mo.	Negro	Girl	Diphtheria
	41	3 mo.	Negro	Boy	Abscess, retropharyngeal
	42	1 yr	Negro	Boy	Papilloma of larynx (pedunculated, fibroepithelial, 0.8 cm. in diameter)
	43	1 day	Negro	Girl	Hemorrhage, massive intra-abdominal
Ovary (1 Case)	44	8 yrs.	White	Girl	Undetermined (Carbon tetrachloride therapy)
Undetermined (2 Cases)	45	6 wk.	Negro	Girl	Undetermined

*Deaths from trauma, poisoning, anesthesia, and postoperative conditions excluded

**From series of 548 consecutive autopsies, 10-year period, at Macon, Ga., Hospital, and at Spartanburg, S. C., General Hospital.

hookworm disease, whose sudden death followed the administration of oil of chenopodium. I recall two similar deaths from chenopodium given to little children, at the Milledgeville (Georgia) State Hospital, several years ago. In Group C, there is mentioned the case of an 8-year-old girl whose death supervened soon after she had taken a dose of carbon tetrachloride, which had been prescribed for the cure of uncinariasis. The inability of undernourished children to withstand the toxic effects of vermifuges appears to be due, not to anemia alone, but to a need of additional calcium in the blood as well. Atkinson²⁵ has found that both deficiencies may be overcome by giving calcium and iron before the anthelmintic treatment is begun. Iron, he has learned, acts efficiently in these cases as a hematinic even before the parasites are eliminated.

The relationship between enlargement of the thymus and sudden death is unsettled. Hyperplasia of the organ may be present with few or no symptoms; at other times it seems to accelerate death from some concomitant infectious disease. *Status thymico-lymphaticus* is no longer regarded as a syndrome adequate to account for sudden death. My faith in this status as a cause of death was rudely shaken long before the British com-

mittee²⁶ decided positively that the lymphatic constitution is not a definite unit of disease. I witnessed an autopsy upon a child who had died suddenly, in which the single abnormality discovered was an enlarged thymus. Influenced by articles which I had read, I was persuaded that I had seen a case of status lymphaticus. A few days later, the chemist returned 3 grains of strychnine which he had recovered from the viscera of the lad.

CONCLUSION

If this brief review shall contribute to a better understanding of what the usual antecedents of sudden death are, the object of my endeavor will have been attained.

DEATH, be not proud, though some have called thee
Mighty and dreadful, for thou art not so . . .

One short sleep past, we wake eternally,

And DEATH shall be no more . . .

—English lyric, *Death*, by John Donne.

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Site of Principal Lesion	Associated Lesions	Comment	ORGAN SYSTEM PRIMARILY INVOLVED
Tentorium cerebelli	Partial atelectasis of lungs	Recent hemorrhage	Nervous (7 Cases)
Lateral ventricles	None	Congenital	
Rt. corpus callosum,	Extensive defects of	Congenital exencephaly,	Respiratory (9 Cases)
Rt. lateral ventricle	cranial bones	region of nasion	
Brain and meninges	Aspirated vomitus in lungs.	Aspiration of vomitus	Vascular (1 Case)
	No inflammatory reaction.	probably agonal	
Lungs	None	None	Undetermined (2 Cases)
Lungs	Partial atelectasis, both lungs	None	
Lungs	None	None	Respiratory (9 Cases)
Lungs	None	None	
Middle and lower lobes,	Acute fibrinous pleuritis	None	Vascular (1 Case)
Rt. lung			
Tonsillar region	Asphyxial changes, lungs	Toxemia	Undetermined (2 Cases)
Region of uvula and fauces	Asphyxial changes in lungs	Pseudomembrane	
Retropharyngeal region	Asphyxia	Pneumococcus abscess	Respiratory (9 Cases)
Larynx	Asphyxia. Thymus large	Possibly spasms of glottis. No noteworthy edema	
Region of Rt. ovary	None	Spontaneous visceral hemorrhage in newborn	Vascular (1 Case)
No lesion	Slight anemia	Death soon after hookworm treatment	
Lungs, slight changes	Edema and early congestion of lungs	None	Undetermined (2 Cases)

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SULFAGUANIDINE

(Edi in Minn. Med., July)

Now that sulfaguanidine has been accepted for general use by the medical profession, further evaluation in a larger number of cases is permitted. One is warranted in prescribing the compound in acute bacillary dysentery. The results of therapy in patients with typhoid and paratyphoid fever, cholera, and chronic ulcerative colitis will be awaited with interest, as well as the treatment of carriers of the typhoid bacillus.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M. D., *Editor*, Richmond, Va.

DOCTOR WILLIAM G. SPILLER--A MEMOIR

I have become possessed, in the form of a reprint, of a copy of the Memoir of Dr. William G. Spiller, by my friend, Dr. James William McConnell. The brief sketch of Dr. Spiller's life with a highly condensed statement of him as a pioneer medical scientist was read to the College of Physicians of Philadelphia on December 4th, of last year. Dr. Spiller had died in the hospital of the University of Pennsylvania on the previous 18th of March. Dr. McConnell is peculiarly fitted to write about Dr. Spiller and the meaning of his life to scientific medicine in the domain of neuropsychiatry. I believe that Dr. McConnell is a nephew of the late Dr. Charles K. Mills, the father or the founder of neurology in the United States. Dr. McConnell breathed the air of neurology, from his very infancy, and his earliest years were spent in a deeply thoughtful medical atmosphere, in which he soon became conscious of the revolutionary changes that were around the corner in medicine.

Some years, but not enough of them to put Dr. Spiller in one era and Dr. McConnell in another era, separated the two in age. Each witnessed the growth of the other and each helped to make possible the growth of the other. Since his graduation from the Medical School of the University of Pennsylvania about fifty years ago Dr. McConnell has observed and has participated in the development of neurology and of neurohistopathology in this country.

Every young man who is contemplating the study of medicine should read the McConnell Memoir of Dr. Spiller. Although Dr. Spiller must have acquired an international reputation as a profound medical scientist many years before his death, he did not take to medicine from his mother's breast, and there is no evidence that he felt called, in ecclesiastical language, into medicine. It would seem that he did not know what he was to attempt to make of his life until his wife discovered him and revealed him to himself. Dr. Spiller's father, a cloth merchant of Baltimore, was a native of King William County in Virginia. He had married Miss Anne Augusta Maltby, probably in 1840-odd.

Dr. Spiller, whom Dr. McConnell memorializes, was born in Baltimore, in the darkest days of the Civil War, on September 13th, 1863, less than

three months after Gettysburg. Before the lad who was to become the eminent physician had reached the age of eight years his mother was dead; his father married again, and the father, too, was dead before his son was fifteen. The lad had been placed by his father in the Cheltenham Military School, at Ogontz, in Philadelphia, and his guardian continued him there after his father's death. Young Spiller's early days at home, where he soon became both motherless and fatherless, were probably not happy. But he had a happy and a popular roommate at the military school for whom his friendship was so strong that he followed him to Dakota. There young Spiller, city-bred, purchased a ranch and spent six years in growing wheat. Good fortune brought him as a wife his former roommate's sister, Miss Helen C. Newbold. She participated with him in the ranching and agricultural life for two or three years. But she was evaluating him, and her analysis convinced her that her husband was neither a stockman nor a wheat-grower. She sensed his appreciation of the beautiful, his fondness for Shakspeare, for rhythm, and his love of poetry and of good literature. Even while living on the arid plains of Dakota he would occasionally indulge himself in writing verse. Perhaps it was there, on the boundless plains, that he learned the art of concentration. He could and he did learn by heart long passages from Shakspeare and from other poets.

His wife observed his interest in the cause of things. She encouraged him to study medicine. He entered as a medical student the University of Pennsylvania in 1889, at the age of twenty-six, and was graduated, a gold-medalist, at the top of his class in 1892, lacking one year of being thirty years of age.

But he had not found himself: his wife sensed that. He had found his profession but not the particular domain in it in which he belonged. He was somewhat asocial, certainly a trifle shy, and he did not commingle easily and joyously with the crowd. His wife dissuaded him on account of those traits from taking an internship as a step in the direction of internal medicine.

With her encouragement, both of them went abroad for his further study, and in search of his inner self. A few months were spent, perhaps not profitably, in London; a year almost in Berlin, profitably, where he learned the language; but he found the medical niche in which he wished to spend his medical life. In Vienna, in Obersteiner's laboratory, his interest in neuropathology was aroused; and in the clinics he studied the reflected symptomatology of the underlying neurological pathology.

Dr. Spiller had travelled far—from his broad wheat fields on the plains of the Dakotas, through the University of Pennsylvania, to London, to Berlin, to Vienna, and, at last, to Paris, to the celebrated clinic of Dr. J. J. Dejerine and his wife, also a neurologist. There he probably said to himself for the first time in his busy and somewhat adventurous and unsettled life: eureka, I have found myself and my life work.

While Dr. Spiller was abroad, immersed in study, the Pepper Clinical Laboratory had been founded by William Pepper, the Provost of the University of Pennsylvania. The Provost was anxious that research in nervous diseases be undertaken in the new institution, and the Dean of the Medical School suggested that the young, unknown Dr. Spiller be called to take charge of that activity. But Dr. Spiller was lost to the authorities of the University of Pennsylvania. At last Dr. Henry W. Cattell found him in the Dejerines' Laboratory in Paris, and from there he was promptly and without fanfare brought to the membership of the faculty of the School of Medicine and placed in charge of the research work in neurology. In that field he laboured unremittingly, wherever he might be and in whatever position he might occupy—in the laboratory, in the ward, in his private office. He was forever in search of the cause of the deflection from health and normality in the domain of the neurologic.

Dr. McConnell tells of the first visit of Dr. Spiller to Charles K. Mills on his return from Paris, in 1896, to assume his new duties and to direct the new investigative work in the Pepper Laboratory. That meeting of Dr. Spiller and Dr. Mills, at which Dr. McConnell was present, constituted an event in American neurology; it marked the beginning of scientific neurology in the United States.

Soon Dr. Spiller was at the head of the clinic in nervous diseases in the Polyclinic Hospital, on Lombard Street at Nineteenth. It was there, in my internship days, that I came to know Dr. Spiller, and to develop an appreciation of his zeal, his enthusiasm, and his insistent search for the causes of things. The most inert interne was quickened by the vigor and the directness with which Dr. Spiller investigated the condition of his patients in the clinic. We sensed that he was forever trying to find out in understandable terms the causes of the conditions that brought the patients to his clinic.

Dr. Spiller was tallish, thin, stooped, never ruddy nor robust-looking, and we would wonder how such somatic sparseness could elaborate so much physical and intellectual vigor. There was never a dull, static, or prosaic moment where he was. We felt that he was ceaselessly impelled by a scientific

curiosity that would permit no rest of body or of mind until the truth had been uncovered. In the Polyclinic Hospital of the University of Pennsylvania, in the Philadelphia General Hospital (Old Blockley), he did most of his work from 1896 until the roll of the years had brought him into a state of inactivity only a little while before his death.

I recall the interest displayed by Dr. Spiller in pellagra as soon as that disease fell with such pestilential-like fury upon certain regions of the South. I had gone in mid-summer, 1905, directly from my internship in the Polyclinic Hospital to the Medical Staff of the State Hospital at Morganton. There in mid-summer, 1906, I had witnessed the death of a young man from a condition that I knew I had not seen before. I examined him carefully, I made copious notes, but the intractable diarrhea, the inflamed gastro-intestinal canal, the blistered hands, and the associated delirium, which steadily lessened his strength, all defied my efforts, and he sunk down into the grave of exhaustion. I did not know his malady. I knew that I did not understand his ailment. A year later, when I read in the *Journal of the American Medical Association's* issue for July 6th, 1907, the report by Dr. George H. Searcy of the presence of pellagra in the State Hospital in Alabama, I remarked aloud to myself: why, that is what killed the Ward boy last summer. Within a few minutes I had asked Dr. Isaac M. Taylor, who had sent the patient to the State Hospital, if he had read the report of Dr. Searcy. He replied that he knew Dr. Searcy well, and that as soon as he could read the report he would call me. When Dr. Taylor called, less than an hour later, his remark was that he and I should have written Dr. Searcy's report a year earlier. I had never before seen pellagra, but Dr. Taylor told me that during his sixteen years of service in the State Hospital he had seen death come to patients after months of wasting away from diarrhea, eczema on the backs of the hands, sore mouth and delirium. The clinical records of the State Hospital at Morganton recorded such symptoms long before the outbreak of pellagra in that region soon after 1900.

Dr. P. V. Anderson, my present associate, came also from the Polyclinic Hospital to the State Hospital at Morganton, a little later than I, and in 1910 Dr. Spiller asked Dr. Anderson if he could not be supplied with certain tissue for study from patients dying of pellagra. The man patient, from whom material for study was sent to Dr. Spiller, died in January, 1910; the woman from whom tissue was sent to Dr. Spiller died in May, 1910. Dr. Anderson furnished Dr. Spiller the clinical notes on the woman's condition; I supplied him with such data about the man dead of pellagra. The woman had been, at the time of her death, a

patient in the State Hospital for only four or five months; the man had been living in the Hospital in quiet dementia for more than twenty years. Dr. Spiller presented the study of the two patients to the meeting of the College of Physicians of Philadelphia on December 7th, 1910. In the *American Journal of the Medical Sciences* for January, 1911, the situation was presented in full under the caption:

Pellagra with a Report of Two Cases with Necropsy

By Paul V. Anderson, M.D.

Morganton, N. C.

and

William G. Spiller, M.D.

of

Philadelphia

Dr. Anderson and I have always been proud of our association with Dr. Spiller in that pioneer work in pellagra. I made the necropsies and selected the tissue and prepared it and sent it to Dr. Spiller. He told us, when he asked for the material, that he could not find, even in 1910, any report of a necropsy made on a pellagrous patient in this country; and that so far as he knew I had the unique experience of making in the United States the first post-mortem following death from pellagra, and that he had examined for the first time in this country pathologic pellagrous tissue.

The names of Dr. Searcy and of Dr. Spiller are seldom heard or seen in these days, only thirty-four years after Dr. Searcy reported the first cases of pellagra in the United States, in spoken or written statements about pellagra. Yet the observations and the work of these two were primal in pellagra.

We students and internes thought of Dr. Spiller as the student, impelled by eager yearning to know, and ever to know more and more and more. He knew no rest, perhaps because he was always so busy that he had no opportunity for thought about himself. We thought of him as a student—a term indicative not only of the desire to know but of the determination also to find out. We heard, too, we students, that Dr. Spiller was a man of substance, and that it was not necessary for him to labour. But as the years rolled and I came to know him better I realized that for him incessant work was rest.

I think of Dr. Spiller as the scientist in medicine. He had no thought of publicising himself. Any such suggestion would have been painful to him.

Medical students and doctors should read Dr. McConnell's Memoir of Dr. Spiller. It is splendidly done. Why should it not be well done? Dr. McConnell is a distinguished neurologist; the spe-

cialty courses through his blood; for almost forty years he was Dr. Spiller's chief of clinic; they worked side by side and each added to the other.

Dr. Spiller's life constitutes a contribution to the dignity of labour in a learned profession. In no other way can valid and lasting achievement come, and in no other way should it come. By directed, zealous activity Dr. Spiller came from the Dakota wheat fields to a position of the highest eminence in scientific medicine.

He, through his father, came out of Virginia. Dr. S. Weir Mitchell, another distinguished physician who did much for the fame of Philadelphia as a medical center, likewise came from Virginia-born parents. Dr. W. S. Forbes, of the Chair of Anatomy at Jefferson in my day, told me that he, too, was Virginia-born, though he added, somewhat sublingually, that he was taken to Philadelphia in his infancy, and that he was Grant's medical chief during the Vicksburg siege.

But I have never known another physician who impressed me as being so solely interested in the search after truth as William Gibson Spiller. He was long in finding himself, but when he had found out what he would do nothing deflected or stayed him until the Boatman came.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

OFFICE GYNECOLOGY

If we would only equip our offices respectably and keep them neat and clean, with an intelligent attendant, we could take care adequately of 90 per cent of our gynecology practice, and have most of these patients come to the office.

The examination of any patient with a gynecological complaint includes a urinalysis. The patient need only cleanse the genitalia, plug the vaginal atrium with dry cotton, and then urinate in order to obtain a clean specimen. If a clean specimen is desired at the time of examination do an office catheterization.

Insure an empty bladder prior to a pelvic examination. This is particularly true as to a young person in whom only a rectoabdominal examination is possible.

Visualize the vagina and cervix by the use of a vaginal speculum. Specula must be available in assorted sizes and shapes.

Very valuable and much neglected is a test of the competency of the levator ani carried out as follows: One or two fingers are placed on the posterior wall of the vagina, palms downward, the patient being in lithotomy position. She is told

to squeeze the finger or pull in, at the same time tapping the buttocks with the thumb to indicate where the pull is to be exerted. A voluntary contraction of the levator is accompanied by an elevation of the patient's chest which can serve as an index that she understands what you mean. The contracted levator can then be explored in its entirety by the vaginal finger. This reveals even minor injuries sustained in childbirth, or as the result of poor episiotomy reconstruction.

After parturition gaping exposes the labia minora completely due to destruction of the most anterior fibers of the levator. This is the normal after parturition. Further separation or non-union of the levator results in rectocele of varying degrees.

The sedimentation rate is a more reliable and delicate for the presence of infection and prognosis than is the white count.

Neglect to examine the breasts may be overlooking the early stage of a carcinoma. In the presence of chafing, ectropion, erosions of all degrees and discharge, microscopic examination is essential. Examination of a drop in saline solution without staining is indicated. *Trichomonas vaginalis* is readily detectable when present in any number, also monilia budding forms are characteristic.

In trichomonos vaginitis almost immediate relief of the most severe itching and burning is given by daily use of glycerine tampons. For eradication of the infection best results from Floraquin (Searle) powder insufflation and Floraquin tablets for home use. In case resistant streptococci are demonstrated, combine the use of the streptococcus vaccine with the local therapy.

Monilia infection yields very promptly to careful painting of the entire vaginal tract with 1 per cent gentian violet.

If there are intracellular gram-negative diplococci in typical clusters, the diagnosis of gonorrhea is made. Here the sulfonamides have proved their worth. The omission of bed rest in a fresh gonorrheal infection is a serious error.

Non-specific vaginitis responds readily to careful painting of the vaginal tract with 2 per cent mercurochrome solution. Senile vaginitis likewise responds to this treatment, but the results can be accelerated by hypodermic injections of large doses of one of the estrogen preparations.

Pruritus vulvae requires examinations of the urine and blood for sugar. In the presence of a normal carbohydrate metabolism treat by 10 to 50,000 units of estrogen (hypo.) and a bland antipruritic ointment. These patients eventually require vulvectomy.

Of abnormal bleeding from the genitals caruncle may be the source—cauterize under local anesthe-

sia. The bleeding of cervical erosion—cure of the erosion by cautery stops the bleeding. It is a simple office procedure which can usually be carried out in one sitting. The practice of hospitalizing patients for cervical cauterization is just as unnecessary as the tendency to do cauterizations in multiple sittings, sometimes through a whole year. Cauterize to a dry black eschar over the entire exposed erosion area. The cervical canal is cauterized in two or four longitudinal axes. Preliminary to the cauterization, the entire cervix including the canal should be rendered free of mucus by dusting with Caroid powder to liquefy the mucus, which can then be wiped off. Do not let the patient leave too quickly, as occasionally there may arise a delayed syncope. Insert a tampon with enough mercurochrome ointment to cover the entire area. The patients report weekly at which time mercurochrome ointment tampons are inserted for 24 hours. The patients are instructed to counteract the odor (when the destroyed tissue begins to discharge) by using Amolin or Quest deodorant powders on the valvar pads, shortly after a menses.

A cervix which shows anything other than a typical erosion should have a microscopic examination. I have found the iodine test unreliable for the differential diagnosis of benign and malignant lesions.

A case history may expose the cause of the sterility. Examination should include pelvic viscera, breasts, hair distribution, basal metabolism, two specimens of the husband's semen—the first in a washed condom, the second spermatozoa recovered from the cervix and posterior fornix. Await the next menstruation, patient to return without having had coitus. For tubal-patency test rarely is it necessary to grasp the cervix with a vulsellum, nor do I sound the uterine cavity to determine the direction of the canal. If the insufflation is successful the patient is instructed to have coitus that night and thereafter during the fertile week. If unsuccessful, it is tried at a subsequent time and the patient is given atropine just preceding. Thyroid administration serves well in many cases, and care for the husband if the spermatozoa are absent, few, inactive, or deformed.

The adolescent may show amenorrhea, infantile genitalia, abnormal secondary sex characteristics and B. M. R. Röntgen study of the sella turcica and the epiphyses of the long bones may show need for hormones. I have chosen to lag behind in the use of these preparations.

Massive doses of synthetic estrogen followed by progestin is a satisfactory method of establishing a normal menstrual rhythm. Thyroid therapy is positive, whereas utilization of gonadotropic and ovarian hormones is still fallible.

In the treatment of the symptoms of the menopause the synthetic estrogens are much more efficacious. Stilboesterol is potent but toxic.

The woman with a retrodisplacement who is fitted with a pessary and her backache is relieved, and if on the removal of the pessary, the symptoms return, the cause of the backache is plain.

In the field of prolapse the pessary is required for—those who are too old for surgery, those who refuse surgery, and those in whom surgery is contraindicated because of various diseases. The inflated round rubber pessary is the most generally satisfactory. The Gellhorn, available in two sizes, very often succeeds when the round type produces discomfort. In a small group with no perineal support the cup-and-stem pessary held in place by perineal straps is best.

The symptomless movable retrodisplaced uterus requires no treatment. This kind of uterus is to have frequent examination to guard against a possible incarceration.

Most of the low backaches complained of by women and old are skeletal in their origin. A retrodisplaced uterus, with varicosities of the broad ligaments and passive congestion, will cause low backache. A therapeutic test with a properly fitted Smith or Hodge pessary will make the diagnosis. Thereafter the treatment in general is surgical.

Chronic infection of the endocervix frequently involves the uterosacral ligaments, makes them tender to the touch and causes pain when the cervix is displaced anteriorly. The endocervicitis is usually curable by cauterization. The residuum usually takes care of itself. When this is low, prolonged hot irrigation at low pressure twice daily hastens the recovery.

For advanced cancer of the cervix or corpus, palliation by irradiation, perhaps division of the presacral plexus or both.

Premarital advice is more and more becoming a part of the duty of the family physician. It is unusual to come across a dyspareunia which is mechanical in origin. These patients require instruction and reassurance. Rarely is it necessary to perform a dissection of the posterior commissure to establish normal marital relationships.

Ureteral stricture symptoms are readily relieved by gradual and repeated dilatation.

Sharply localized trigonitis is not uncommon in the presence of cystocele. Cystoscopic examination reveals the condition. It is possible to reach the same conclusions by palpation of the base of the bladder through the anterior vaginal wall. Instillation of $\frac{1}{4}$ to 1 per cent mercurochrome solution is curative.

In pyelitis urinalysis establishes the diagnosis. Edema or blockade in the ureter may keep pus

cells from the bladder urine. The punch test over the costo-vertebral angle is useful.

COTTON SICKNESS

IT HAS BEEN the lot of numerous doctors in various localities where cotton was being made into mattresses to observe an unusual acute illness among some of the workers. This sickness attacked only those who were in close contact with the cotton and handled it intimately, i. e., the beaters and fluffers. It was not observed among males for the workers were all women of 35 to 55 years of age. One group showed 20 white women affected, another group 8 or 10 colored women.

This disease was not seen where ventilation was ample, nor where the work was done out of doors. The onset was usually 3 to 5 hours after intimate contact and exposure to the dust of the cotton. It was ushered in with a headache, fever had generally nausea, and occasionally vomiting. The aching increased fairly rapidly and fever was noted to 103 to 104°. In one or two there was diarrhea. The fever and aching persisted for 3 or 4 days—in a few as long as 10 days. All symptoms gradually subsided.

Except that there was no respiratory involvement the cases presented all symptoms of influenza, especially the aching. The patients showed that they had been sick—had lost weight and color, and claimed to be very weak. Those that returned to the same work did not have a recurrence, due probably to the recent active immunization.

The cotton came from a southwest state and was of low grade; yellow color and full of dust. One bale showed evidence of moisture and smelled sour and moldy.

The School of Public Health in Bethesda, Maryland has investigated this cotton sickness and endeavored to isolate an organism causing the malady. They have found a flagellated, encapsulated bacillus in the cotton and in the nasal cultures as long as 6 weeks after onset. Blood cultures and cultures from nasal smears are going through the laboratory now, and perhaps they will be able to tell us more about this sickness before many months. At any rate the disease is annoying, but doesn't seem to be fatal.

SPIDER BITE

(Z. B. Noon, Nogales, Ariz., & W. L. Minear, Patagonia, Ariz., in *Southwestern Med.*, June)

Untreated or symptomatically treated cases of bite of the black widow spider usually have a long period of morbidity and a possible mortality.

Treatment with specific antivenin (*Latrodectus mactans*) results in minimal morbidity and no mortality. The earlier the antivenin is given the more prompt is the relief.

It is possible that by giving double the usual dose of the antivenin in the severe cases and when time is a factor (a long period having elapsed after the bite) more prompt relief would result.

INSURANCE MEDICINE

TIME AS A FACTOR IN MEDICAL SELECTION

For this issue ALBERT SEATON, M. D., Indianapolis
Medical Director, American United Life Insurance Company

TIME is a measurement of duration. Life insurance contracts are built upon time and the classification of applicants for life insurance in an attempt to predict their duration of life. Such an attempt can only be predicted upon experiences based upon large groups and accurate statistics.

The duration of the human race changes the environment in which human life exists and these changes modify the prognostic value of these experiences. With the passage of time come changes in the duration of human life. Mortality trends modify mortality statistics. Grandpa may have been killed by a runaway horse. Grandson's life may be saved by the serum of a descendant of that horse. The mortality experience of human life is based upon the number of deaths occurring while the earth moves in its orbit—rather a gross and remotely related thing with which to measure a series of biological events, but still having an effect as shown by seasonal mortality fluctuations.

Some day a biological unit may be developed for the measurements of human life which will be an improvement upon the astronomical incident of a year among the events of eternity. What such a unit of biological capacity might be can only be left to the imagination. It would be a composite of many factors. The process of risk classification is an attempt to correlate the factors which affect longevity as shown by experience so that a definite estimate of the duration of life may be attained.

The physical examination and environmental investigation of a risk for life insurance are practical applications of definite units of biological measurements in an effort to arrive at a measurement of life duration. Time is essential to most functional tests, from taking the pulse rate to performing the most elaborate laboratory procedure. An estimation of the heart's efficiency or the diagnosis of valvular defects cannot be made without giving consideration to the factor of time.

Time as a measurement of longevity shows in the family tree. The biometric studies of Raymond Pearl indicate that the total immediate ancestral longevity (Tial) is as definite a biological attribute as height. Build is a factor affecting longevity, but time added to overweight leaves but few old fat men.

Statistics have accumulated to indicate that many physical impairments show definite rates of mortality and can be so classified. Time is a factor in our National Vital Statistics, which are modified

as increased areas come under registration laws, and death reports conform to the advancements in medical diagnosis. Statistics are hard to accumulate and more difficult to interpret when modified by the passage of time. They are a constant demonstration that nothing is constant except change. Time has recorded the changed methods of treatment and prognosis of physical impairments, and the elimination of many industrial and occupational hazards. New occupations and environments bring new life hazards. Time again is a factor in risk classification. Hours of flight and duration of training help determine the ratings for aviators. The consideration of time in medical examination reports is often neglected, not because of the examiner's indifference but because of the applicant's attitude. Time determines the rating given or other action taken upon most physical impairments. When they occurred is just as important as what they were. Risk in a case giving a history of passing a kidney stone improves with age. Dates, duration and number of attacks of any impairment history mean definite sums in premium dollars. Accurate time records mean equitable and fair treatment of applicants and company.

The older I grow, the more I respect the applicant who by sacrifice and self-denial carries or drags insurance premiums through the years. The premiums should be equitable. If a record is made of a physical impairment, the element of time is as important as the physical diagnosis.

In my opinion, the best examiner writes the best time records of personal and family histories. Time means money in risk classifications. Inaccurate ratings based upon inaccurate records result in losses and lapses, and defeat the objectives of life insurance.

If one thought only could be carried to the examiner when physical examinations are made, in my opinion that thought would be the thought of time. Time, the constant in a world of change. Time, a definite in a nebula of indefinites. Time, the panacea and corrector of judgment. Remember the jingle about Mr. Jenkins and give accurate records of time in medical reports to save us from his fate.

Mr. Jenkins had a brink
Where he used to sit and think
Of the stars above, and the earth below,
And why the world was thus and so.

There is no better place to think
Great thoughts than on a quiet brick,
But Mr. J.'s became so vast
So supercosmic, that at last

Pondering on what God had wrought
He was completely lost in thought.
He disappeared without a sound
And since that time he's ne'er been found.

UROLOGY

RAYMOND THOMPSON, M. D. *Editor*, Charlotte, N. C.

THE HEART IN UROLOGY

IN TAKING OVER the Department of Urology, we wish for this issue to abstract rather fully, a recent excellent paper by Dr. Edwin P. Maynard, Jr.¹, of Brooklyn.

The author first calls attention to the fact that as a class patients with heart disease are not bad risks for major surgical procedures. He reports the work of Drs. Butler, Feeny, and Levine, who studied this question. In 418 patients comprising the whole group the unexpected mortality was 6.3 per cent. On the other hand when 120 patients with rheumatic heart disease were studied separately, the unexpected mortality was 2.1 per cent. In 35 patients with coronary-artery disease and angina there were 3 unexpected deaths, a mortality of 7.7 per cent. Fifty operations were performed on as many patients with congestive heart failure. There were 7 unexpected deaths, a mortality of 17.1 per cent.

Death of cardiac patients during operations is rare. The unexpected mortality is the result of the same complications that beset patients without heart disease—postoperative pulmonary complications, shock and infections. Congestive heart failure and coronary thrombosis are relatively rare causes of unexpected death. Pulmonary embolism is a little more common.

Patients with rheumatic heart disease and lesions of the kidney or bladder belong to the younger age-group, and usually stand surgery rather well. Patients with prostatism belong to the older group and have hypertensive heart disease, arteriosclerosis of the coronary arteries with anginal syndrome and cardiovascular syphilis. If the coronary arteries are involved as evidenced by angina pectoris the risks of surgery are increased. Cardiovascular syphilis in its early stage of uncomplicated aortitis increases the dangers of major operation greatly.

First the physician must diagnose the kind of heart disease the patient has; next he must ascertain how the patient stands the physical activities required by his customary duties. If he can be active in business or do physical labor without distress he can stand a major operation. On the other hand, if the patient has had a previous episode of congestive heart failure, auricular fibrillation, or coronary arteriosclerosis with anginal

syndrome, the physician and surgeon must weigh the importance of the operation against the dangers to be incurred.

It is amazing how well the damaged heart will stand an operation. Patients with heart disease should not be digitalized routinely. Just as in ordinary medical practice, the rule holds that digitalis should be used only to treat heart failure or chronic auricular fibrillation. The surgeon should plan the operation so that it will be as short as possible and so that only essential maneuvers will be carried out. Surgical shock is especially hazardous for the cardiac patient.

The kind of operation should determine the type of anesthesia. In cardiac patients it is especially necessary to avoid excitement, struggling and cyanosis and the best guarantee against these hazards is skillful administration of the anesthetic.

There is much that the surgeon can do to prevent postoperative pulmonary complications. Gentle and meticulous technique will do much to prevent postoperative pulmonary embolism and infarction. Beck cautions against the use of tight dressings across the upper abdomen and lower thorax that may interfere with respiratory movements. In genito-urinary surgery this may apply to the application of dressings after operations on the kidney.

To minimize the danger of pulmonary embolism during the postoperative period it is important to encourage the patient to move his legs about in bed and to exercise the calf muscles by flexing the feet and toes. The deep veins of the legs are favorite sites for the formation of thrombi and every effort should be made to keep the blood flow brisk.

In conclusion, we congratulate the author upon this work and agree heartily in his stressing that each case should be studied carefully by an internist, particularly regarding the type of heart disease and disturbance of function. We believe that a large factor in our low mortality in prostatic surgery has been the careful study of these cases by a capable internist.

HERPES OF THE BLADDER

I have been able to find only four cases of herpes vesicalis reported. My case¹ is that of a white man, 45, with no skin lesion or urinary symptoms, who was riding in a car when he was seized with urgent desire to urinate. The urine "looked like blood," but there were no clots and he had no difficulty with his stream. In a few minutes he again felt a burning desire to urinate; which returned about every 30 minutes, with severe hematuria, and with

1. Cardiac and Pulmonary Complications of Genito-Urinary Surgery. *Brooklyn Hospital Journal* for July read before the Section of Genito-urinary Surgery of the New York Academy of Medicine, March 19th.

1. J. R. Rinker, Fort Worth, in *Southwestern Med.*, June.

increasing pain, maximum at the end of urination and burning in the penis. Symptoms began to subside after 24 hours bed rest.

Examination was negative except for a temperature of 99.6° on admission, thereafter afebrile. Cystoscopy revealed, from the internal urethral orifice at 9 o'clock backward to the post-trigonal region, an area covered by vesicles, the largest 6 mm. in diameter. Scattered among the clear vesicles were a few large yellow vesicles, flat-topped. Urine from either kidney was negative for cellular elements and on culture. Phenolsulphonphthalein appeared in four minutes on both sides. Pyelograms normal.

Acute symptoms referable to the bladder had subsided by the fourth day without treatment other than bed rest. The only treatment thereafter was a 0.5% silver nitrate instillation every third day. By the 11th day the patient was symptom-free; 16 days after the first cystoscopy the lesion had disappeared except for a few reddish areas which were covered by smooth bladder mucosa.

RADIOLOGY

CANCER OF THE STOMACH IN THE YOUNG

HILMAR SCHMIDT, M.D., *Editor*, Petersburg, Va.

"A HIGH INDEX of suspicion is necessary in the case of any youthful subject who presents symptoms presumptive of a diagnosis of gastric carcinoma in older patients." Thus concludes an article by McNeer¹ on cancer of the stomach in the young.

It is a common error to suppose that carcinoma is excluded because of the youth of the subject. The author has collected five hundred cases for his analysis. True, these do not all emanate from one clinic, but they present a sufficient array to place this disease among the differential possibilities.

All but 4 per cent of the group were between fifteen and thirty years of age.

Oddly enough, there was a slight preponderance of females, and of these many cases were observed during pregnancy. This combination seems especially serious, as in all of these cases death ensued rapidly from the disease.

As vomiting and pain were the most prominent symptoms, it made the question of differential diagnosis from ulcers unusually difficult. The roentgenologist must be especially wary in this respect.

The distinctive findings were an abdominal mass, achlorhydria and very late cachexia. This late appearance of cachexia is one of the pitfalls that must be guarded against. In view of the later cachexia, he finds that a larger percentage of the

cases were operable than of the cases in the older age group. As the location was more frequent in the distal part of the stomach and pylorus, resection was possible in many cases.

Prognosis naturally is not good. But it is more favorable than in the older group. Among the operable cases there is an immediate mortality of 25 per cent. Of the remaining cases 20 per cent of those afflicted lived three years without evidence of disease, and in 16 per cent of the resectable cases there was a survival of five years.

In this article McNeer proves the fallacy of the old rule of thumb, "this cannot be cancer because of the youth of the patient." More and more cases of proven cancer in the young are being recorded as we become more and more conscious of the possibility or even the probability of cancer being the explanation of the symptom-complex in an ever-increasing number of the cases coming for diagnosis and treatment. This does not apply to gastric cancer only but also to the cancer of other organs.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

MORE INDICATIONS FOR SULFONAMIDES

THE field of usefulness of the sulfonamide group of drugs grows bigger all the time. For some time we have known the benefits of sulfapyridine and sulfathiazole in pneumonias and gonococcus infections, sulfanilamide in treating streptococcus infections, sulfathiazole for staphylococcus infections etc. A member of this group of drugs is being used now very successfully in treating colitis, especially in children. Sulfathiazole seems to be the drug of choice in diarrhea and its prompt action in stopping the diarrhea with blood and pus in the stools is amazing. Many babies with diarrhea are now being saved during the summer months and their illness cut short by giving sulfathiazole by mouth. Some medical men give larger doses than others. I usually give about the same dosage as I would in treating pneumonias. It is not uncommon to see a difference in the stools after 4 or 5 doses are given and the child usually will be well in a few days.

The powdered drug is now being used with much success in surgery. From sulfanilamide or sulfathiazole powder in the peritoneal cavity during operation, for localized abscesses or generalized peritonitis, surgeons are reporting excellent results. The high concentration of the drug locally seems to be more beneficial than by giving it some other way.

Local abscesses anywhere in the body after incision and drainage are usually helped by local applications of either powdered sulfanilamide or sulfathiazole.

¹ Cancer of the Stomach in the Young, by Gordon McNeer. *Am. Jour. of Roentgenology*, April, 1941.

In repairing lacerations of the perineum following childbirth a small amount of the powder applied in the wound helps keep off infection and thus keeps many repairs from breaking down.

A 5 per cent solution of sulfathiazole seems to work well used as a spray in cases of sinusitis and sore throat.

The field of rectal surgery has almost been revolutionized recently by using the powdered drug in the wounds during operations. Infected fistulous tracts are now being dissected out and powdered sulfanilamide or sulfathiazole applied and the wound closed with sutures allowing prompt healing in many cases instead of leaving the tract open to take many weeks for the healing process. During hemorrhoidectomy and the excision of fissure-in-ano the drug is used with much success.

In treating dirty lacerated wounds seen in so many accident cases it will be found that the local application of the powdered drug will prevent many wounds from becoming infected.

OBSTETRIC ANESTHESIA IN THE HOME

HERE¹ we have a sensible, practical discussion of a subject which concerns most of us.

It is questionable whether first-stage analgesia is ever desirable in the multipara in the home; but, in the primipara, especially in prolonged labor, morphine is sometimes indicated. Give very small doses of morphine, repeating until the desired analgesia is obtained, but stopping short of cyanosis or great slowing of the respiratory rate. Scopolamine given with morphine increases the respiratory rate, counteracting to a degree the effect of morphine; excitement may be avoided by beginning with small doses and repeating. The proper proportion is usually 1 part scopolamine to 25 parts morphine.

In the second stage ether is fairly satisfactory when there is no danger from lamps or a stove in the room, by the open method on any simple mask. At the beginning of the pain, 45 to 50 drops of ether are poured on the mask, the patient breathes deeply of this 2 or 3 times; a few more drops are added, the patient again inhales and the mask is removed. This is repeated with each pain. The patient is never unconscious. For surgical anesthesia in the home, ether is the only safe agent. Chloroform is useful and safe in the second stage for analgesia with each pain where the second stage is short, and it is often the only pain-relieving drug used during the entire labor if prolonged or deep anesthesia is not needed.

If the fetus is at all times assured of adequate oxygen, a reasonable prolongation of labor is unimportant. The fetal heart tone should be fre-

quently examined in order to relieve with pure oxygen any alteration in fetal heart rate.

Schreiber has found by examination of the records of mentally defective children in whom there was no history of inherited defect, infection, or trauma associated with birth a definite relationship between fetal oxygen want and the later neurologic defect.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE TREATMENT OF CONTAMINATED WOUNDS WITH SULFATHIAZOLE POWDER

THE word chemotherapy has acquired new significance since the discovery of sulfanilamide. Clinicians are only beginning to appreciate the effectiveness of this group of drugs when used in the prevention and in the treatment of infection. Their applicability has become so general that the problem in the individual case is now largely one of selection. Members of the group vary in toxicity and in potency.

A phase of chemotherapy of particular interest to surgeons is the local application of the powdered drug in wounds that are either grossly or potentially infected. Orthopedic surgeons early reported encouraging results from the local use of sulfanilamide powder in the treatment of compound fractures. Because it is more effective against staphylococci, we have used sulfathiazole powder in a series of contaminated operative wounds with surprisingly beneficial effect. In a case of acutely perforating peptic ulcer, in five cases of gangrenous ruptured appendix, in a case of ruptured gallbladder, in a case of strangulated inguinal hernia there have been noticeably smoother convalescence and better wound healing.

We have not used the drug within the peritoneal cavity although others have done so and recent experiments on animals show that neither functional nor anatomical injury is caused by its direct application to the brain.

The powder has no hemostatic effect and bleeding should be carefully controlled before it is applied. When it comes into contact with the tissues enough soon goes into solution to gloss the surface and to change the color. This makes differentiation difficult, so tissue planes should first be identified for suture. To provide for the escape of the serous exudate which forms in grossly infected wounds they should be drained even though the drug is used.

During the first world war frequent irrigations of Dakin solution were used in wounds to prevent infection. This necessitated constant nursing care

(P. V. Moore, Iowa City, in *Iowa State Medical Soc. J.*, 31: 1,49, 1941)

and the frequent change of dressings. The use of sulfathiazole powder in wounds has many obvious advantages over this. Dressings do not have to be changed frequently. Wound discharge not increased but lessened. The local antiseptic effect of the drug is exerted in the tissues of the wound continuously so that infection and suppuration are inhibited. For liberal application in a wound, we use one or two teaspoonfuls of sulfathiazole powder. Absorption of the drug continues for the several days of the incubation period of infecting organisms so that the patient during this vulnerable time is also protected against the hazard of bacteremia just as effectively as though administration had been by mouth. We have observed no harmful reaction either local or general in our cases and the blood concentration of the drug has always been within safe therapeutic limits. By this method the patient is spared nausea and the nuisance of oral or hypodermic administration during the first trying postoperative days.

No doubt other members of the sulfanilamide group in time be discovered. Their therapeutic effects will also vary so that the indications for the use of any individual drug will have to be learned from experience. Certainly the possibilities of this form of chemotherapy are just beginning to be understood.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

TREATMENT OF CHRONIC ULCERS OF THE LEGS WITH THE USE OF UNNA'S PASTE BOOT

THIS¹ is the description of the method of treating ulcers that is best of all.

Unna's paste boot acts as a supporting bandage and as an antiseptic dressing.

The ingredients for a 10 kg. batch are 1 kg. zinc oxide (C.P.), 1 kg. good gelatin, 3 kg. water, 4 kg. Glycerine (C. P.)

Gelatin placed in cold water until soft and swollen, then firmly squeezed out, contains the 4 kg. of water. It is placed in a water-bath and stirred until dissolved. At the same time the zinc oxide is stirred up with 1 liter (1 kg.) of water, forming a thick paste, which is then mixed with glycerine by vigorous shaking. The mixture is now poured into the prepared gelatin and again well shaken. Then the mixture is poured out into a shallow vessel. After 1 or 2 hours it has solidified into a white jelly.

Slices of the prepared paste, enough to make a boot, are placed on a water-bath until the paste has completely dissolved. The leg is cleaned with soap and water and dried. The ulcer is cleaned

with any antiseptic solution and a thin coating of any ointment is applied over it. A thin sterile dressing is then applied over this. The Unna paste melted and cooled to a t. which will be tolerated is then painted on the leg with a large brush from just below the knee to just above the toes. While it is still moist, the leg is enveloped in a carefully applied single-layer gauze bandage. A second coat of Unna's paste is applied and over this a second layer of gauze bandage. Frequently this suffices but when more support is needed a third and a fourth layer of bandage and paste may be applied. *The more the patient walks with the leg thus bandaged, the more quickly will the ulcer heal.* The boot is left on for from 7 to 10 days, after which time it is removed by cutting through with scissors. On removal, usually the ulcer is healed. If not yet healed another boot is applied and kept on for a week or two. In the cure of very extensive ulcers 3 or even 4 applications may be necessary. The principal indications for its removal and reapplication are soiling of the boot and such reduction in the swelling that the boot no longer provides support. Discontinuing the use of the boot too soon may result in recurrence. No windows or doors shall be cut.

TREATMENT OF DIABETES IN THE AGED

OLD diabetics should not be neglected. Here¹ is given a satisfactory outline.

Therapy must be as simple as the oldster desires, and no attempt should be made to change the habits of a lifetime. The practice of permitting older patients to have an elevated blood sugar so that they will feel better must be severely condemned.

Extra-diabetic complications, responsive to proper therapy, will be successfully treated in the diabetic.

Avoid radical changes in diet or insulin. Shocks are serious; glycogen stores in heart muscle should be guarded. Arteries are fragile. The structures of the eye and nervous system cannot resist rapid chemical changes.

Reasonable, firm discipline must be maintained. Routine visits for blood sugar estimations are necessary.

Do not take any physical condition for granted. Examine the feet, eyes, and heart. It may take the patient months to get the courage to speak of a sore toe or failing vision.

Senile diabetes is gentle enough to use a household measured diet as routine. Vitamin deficiencies and mineral shortages must be foreseen in the original diet prescription.

Many older patients will be able to enjoy better health and have larger and more varied diets from the use of protamine zinc insulin daily.

¹ L. B. Greentree & L. F. Gallardo, in *Philippine Med. Assn. J.*, 21: 31, 1941)

¹ J. W. Mitchell, Pitts-burgh, in *Penn. Med. J.*, May

RESUSCITATION OF THE NEWBORN

Mouth-to-mouth insufflation remains a method of distinct value, while awaiting materials for tracheal intubation, a procedure which often proves unnecessary by the time it is available. Mouth-to-mouth insufflation should be employed very cautiously because of the danger of rupturing the alveoli. A small catheter should be passed into the stomach to evacuate the gas bubble.

In immersing in hot and cold water alternately, assepsis is impossible, and the position in which the infant is held prevents drainage of the bronchial tree; physical shock is excessive, and the method offers no advantages over maintenance of body heat by warm blankets with occasional sensory stimulation by slapping the buttocks or soles of the feet.

Carbon dioxido-oxygen therapy richly deserves the wide usage which it enjoys.

For tracheal catheterization the catheter is aspirated full of fluid, removed, the contents blown out and the catheter reinserted very quickly. With the catheter in place, carbogen or oxygen is introduced at will, care being taken to use pressures that do not exceed 4 to 5 mm. Hg.

Alpha-lobeline is helpful in increasing the depth and frequency of respirations, once spontaneous respirations have been established.

Intracardiac injection of adrenalin, resorted to in desperation on a number of occasions, in only two instances seemed to help in the least.

The authors have had no experience with the various mechanical respiration apparatus.

1. W. B. Thompson & E. J. Krauhulik, Los Angeles in *Western Jt of Surg. Obs. & Gynec.*, 49: 169, 1941

ROWING METHOD OF ARTIFICIAL RESPIRATION

(M. C. Rosekrans, Neillsville, in *Wisc. Med. JI* July)

With the patient supine, place yourself at the patient's head. Grasp the patient's arms at the wrists and firmly extend his arms above his head, to raise the chest, keeping them there long enough for air to enter the chest; then rapidly drop the arms back toward the patient's chest, leaving them there long enough for air to rush out of the chest. Repeat 10 to 12 times per minute.

No pressure is brought to bear upon the body at any point. With the patient in a comatose state, being relaxed as he is, the chest is raised with very little effort. One operator is able to carry on this rowing motion for two hours or more with perfect ease.

Only one of the many methods of artificial respiration has survived—prone pressure. This method is not entirely satisfactory for the following reasons:

(1) It requires several persons to keep the operation going continuously.

(2) It often produces trauma to the ribs and other tissues.

(3) It cannot be used upon a patient supine on an operating table.

(4) It does not readily adapt itself to convenient observation and care of the patient.

(5) The procedure is that of an entirely negative phase of respiratory mechanism throughout, and admits only a minimum of aeration.

The rowing method adapts itself to use under any condition where artificial respiration is necessary, except in the case of removing an electric shock victim from a pole, where an anterior-basal chest-squeeze is used while descending the pole.

DERMATOLOGY

J. LAMAR CALLOWAY, M.D., *Editor*, Durham, N. C.

THE MANAGEMENT OF DERMATOPHYTOSIS

DERMATOPHYTOSIS (athlete's foot), one of the commonest and sometimes one of the severest of all dermatoses, is caused by several common fungi and is often difficult to cure. Bacteria (*Staphylococcus*, *Streptococcus*) often complicate the infection with serious sequelae. About seventy-five per cent of all adults have the infection either in a latent or active phase. The latent phase is characterized by scaling, fissuring and maceration between the toes and the toe webs, and by an occasional small vesicle over sole and dorsum. Fortunately for these carriers, the disease is essentially asymptomatic and causes few or no serious complications.

The latent phase can be successfully treated in the majority of instances by careful drying between the toes after each bath plus massage to get all of the dead skin out from between the toes. The patient should be instructed to avoid walking barefooted on bathroom, shower, gymnasium, swimming pool, locker room, or other floor. Fingers should be kept away from infected areas. Infections to other parts of the body are sometimes spread in this way. Socks should be changed daily. Cotton socks should be worn so that they can be boiled after each day's wear. It is sometimes necessary to fumigate the shoes since shoes frequently harbor spores of the fungi which serve as a source of reinfection. A powder such as is detailed below dusted between the toes and over the soles of the feet each morning will as a rule control this latent phase.

Rx Thymol iodide	0.6
Salicylic acid	1.8
Camphor	1.8
Talcum	30.0
Zinc oxide	30.0

Sig: Use locally as dusting powder.

When the disease becomes more active, especially with the development of secondary infection, lymphangitis and lymphadenitis, sometimes with erysipelatosus spread, the patient should be immediately taken off his feet, placed at bed rest, given warm wet compresses using either saline, boric acid solution, or 1:4000 potassium permanganate. Mechanical debridement should be done, all the vesicles and bullae being clipped and all of the crusting and dead skin cleaned away. In some instances sulfathiazol or other of the sulfonimids are necessary to help control the secondary infection.

After all the secondary infection is cleared up an ointment may be used locally at night followed by the application of a dusting powder such as detailed above the following morning. A simple yet satisfactory ointment is this:

Rx Thymol iodide	0.6
Salicylic acid	1.8
Benzoic acid	3.6
Boric acid ointment.....	60.0

Sig: Apply locally each night. Remove excess in morning and apply dusting powder.

Other complications, dermatophytides, the use of x-ray therapy, desensitization, vaccine therapy, and other special measures should be used only by one especially trained in the care and treatment of the skin.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

TREATMENT OF PULMONARY ABSCESS

THE observations in this article concerning the proper treatment of pulmonary abscess of the acute type are derived from a discussion of the subject by Harold Neuhof in a recent issue of *Diseases of the Chest*. The author notes that treatment of this serious complication is principally conservative; and that the condition is not considered surgical by most men in its acute stage, surgical treatment being employed only for urgent complications, or when bronchoscopic and postural drainage, drugs and bed rest fail to benefit. The arguments against surgery are reports of spontaneous cure and the assumption that pulmonary abscess is a pneumonic lesion in the beginning. The author admits that the occurrence of spontaneous cure is not rare, but notes that the reported incidence of such cure ranges from 10 to 90 per cent, which indicates considerable discrepancy in results. He says that such discrepancy in figures may be due to a difference in follow-up and a difference in the criteria by which cures are judged. He contends that with strict criteria of cure (freedom from symptoms, disappearance of cavity and pulmonary infiltration) and complete follow-up, the percentage of cures from conservative treatment is low, and that the argument for a high percentage of cures by non-operative procedures is fallacious.

It is also the opinion of this author that "the assumption that widespread pneumonic infiltration, occupying more or less ill-defined pulmonary zones characterizes the pathology of acute abscess of the lung" is based on the interpretation of the x-ray film and is not a fact.

There follows a discussion of the pathology of acute pulmonary abscess, on which, the author states, his advocacy of surgical treatment is based.

Acute abscess of the lung is divided into the more frequent putrid or anaerobic abscess, and the less frequent non-putrid or aerobic form. The acute putrid abscess is a superficial solitary monolocular lesion within a pulmonary lobe, with a thin and soft overlying shell, which is compressed and avascular. The surface of the lung over such an abscess is always attached to adjacent structures by adhesions which may bind the surface of the abscess to an adjacent pulmonary lobe, to the mediastinum, or to the diaphragm. Such abscesses usually have a limited amount of pneumonitis around them and limited changes in the bronchi except in the immediate area of the abscess. A chronic putrid abscess has stiff walls, is multilocular, and there is extensive pulmonary infiltration with fibrosis and extensive changes in the bronchi.

The pathology of acute aerobic, non-putrid abscess is more variable than that in putrid abscess. It may be in the midst of an area of bronchopneumonia, or, although the abscess may be a prominent part of the lesion, extensive bronchopneumonia may also be present. Features of putrid pulmonary abscess are sometimes seen in the non-putrid type, the latter being usually unilocular and of considerable size. The author states that recovery from non-putrid abscess under conservative treatment often occurs, and that this may account for the many cures under conservative treatment, the aerobic cases being combined with the anaerobic in the reports.

The author has arrived at the conclusion that practically all cases of putrid pulmonary abscess are amenable to surgical treatment in the acute stage, but only exceptional cases of non-putrid, aerobic abscess should have surgical interference, and that there is no reason for setting any certain time for observation before surgical treatment is instituted.

The indications for operation are given as follows: (1) no evidence of subsidence of the process during observation; (2) an unsatisfactory clinical course; (3) a pulmonary abscess more than 2 inches in diameter; (4) x-ray evidence of extensive pleural reaction, suggesting danger of perforation of the abscess; (5) clinical or bronchoscopic evidence of interference with adequate bronchial drainage; (6) fluctuating, remitting or stationary course; (7) increase in the size of the abscess during the period of observation; (8) potentially dangerous location of the abscess, as in the cardiac lobe or at the mediastinum.

A properly planned operation must be based on (1) the fact that an acute abscess is solitary, superficial, with overlying pleural adhesions, and (2) the exact localization by x-rays of the site of contact between the abscess and the thoracic wall. The author claims that errors in localization can be caused only by error in x-ray interpretation or in

counting of the ribs at the time of operation. The method of choice for spot localization is that of Rabin—the injection of a small amount of methylene blue and lipiodol at the predetermined site of contact of abscess with chest wall, followed by a series of films taken in different positions. The relationship between the lipiodol and the abscess will be shown, and the methylene blue in the intercostal space will designate the rib to be removed at operation.

The operation is a one-stage procedure, the abscess being entered through overlying pleural adhesions, unroofed, and packed. The author prefers local anesthesia, in most instances the removal of a portion of one rib is sufficient. After inadequate operation continuation of symptoms and extension of the abscess may be expected. An adequate operation usually results in subsidence of the symptoms.

Cases operated on by the author and his associate in the last 15 years number 109. There were four deaths following operation, a mortality of 3.6 per cent. Several other deaths occurred months or years after the abscess had healed, due to unrelated causes. One-third of the cases were of the severe acute type, and three of the four deaths occurred in this group. According to these results acute putrid pulmonary abscess is a surgical disease, the results of precisely performed operative procedures excellent and the mortality low. The author further states that "the menace of subacute and chronic abscess will disappear only when the problem is squarely faced and adequately solved in the acute phase."

INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

FACTORS INFLUENCING IMMEDIATE MORTALITY RATE FOLLOWING ACUTE CORONARY OCCLUSION

THE common occurrence of attacks of coronary artery disease makes it incumbent on all doctors to know all they can about this kind of seizure. What to tell the patient or family as to the outlook is an important part of this knowledge.

The number of cases seen and carefully studied at the Mayo Clinic afford pertinent and reliable information.¹

One hundred and twenty-eight cases of acute coronary occlusion were taken at random.

The mortality within six weeks of the acute attack for the 32 patients less than 50 years of age was 28.1%; for all between 50 and 59 years of age, 41.7%; for those between 60 and 69, 57.1%

and for those 70 years of age or more, 84.6%. The rate for men in this series of cases was 41.7%, as compared with 75% for women.

The incidence of previous angina pectoris was 39.7% in the group of patients who lived and 40% in the group who died within the immediate period. Of the group of patients who had acute coronary occlusion and survived, 19.1% gave clinical or electrocardiographic evidence or both of having had an attack of coronary occlusion in the past.

Pulmonary edema occurred in 33.3% of the deaths within the immediate period, not observed among the patients who survived; congestion of the liver in 15% of the cases in which death occurred, not present in any cases in which death did not occur; 15% of the patients who died and 2.9% of those who survived the acute attack had cerebral thrombosis. Pericarditis was recognizable in 10% of the cases in which death occurred and in 1.5% of the other cases.

Ventricular extrasystoles following acute coronary occlusion are ominous.

Massive pulmonary embolism was the immediate cause of death of 10% of all patients who died within the immediate period but did not occur among the patients who survived. The source of these pulmonary emboli was not the mural thrombi in the heart but thrombi in the iliac vessels. The decrease in b. p. which follows acute coronary occlusion and the complete rest in bed and inactivity on the part of the patient facilitate the formation of thrombi, particularly within the iliac veins.

Fifteen of the 60 patients who died gave clinical and pathologic evidence of severe myocardial failure after the onset of the acute coronary occlusion and myocardial infarction. In 10 there was passive congestion of the lungs. In the other five cases clinical and pathologic evidences of pulmonary and hepatic congestion were present.

Cerebral thrombosis brought about fatal termination in four cases. Rupture of the heart with cardiac tamponade accounted for the death of two.

DIAGNOSIS AND TREATMENT OF GASTRIC DISEASE

STOMACH TROUBLE troubles us all. The English still stick by the term dyspepsia, and we all may get back to it just as we have to gastritis—although it would be interesting to know how many cases of gastritis any one of us has ever seen.

Here is abstracted a helpful discussion¹ of common stomach troubles.

The three common affections of the stomach: gastritis, cancer and peptic ulcer are discussed.

Gastritis, outcast from respectable medical society for many years, has now returned to style.

1. R. M. Woods & A. R. Barnes. Rochester, Minn., in *Proc. Staff Meetings Mayo Clinic*, May 28th.

1. W. L. Palmer, Chicago, in *Miss. Valley Med. J.* July.

The clinical diagnosis of gastritis can be made only by gastroscopy. Hypertrophic gastritis is found not infrequently in patients with peptic ulcer and, at times, in patients with a peptic-ulcer syndrome but without an ulcer. Usually the symptoms are relieved by medical ulcer management even though the gastritis itself as seen by gastroscope persists. Superficial gastritis does not produce symptoms, so no treatment is indicated. Atrophic gastritis is the most important type. The author questions the presence of specific symptoms. The condition is invariably present in pernicious anemia. Under appropriate therapy, the gastric mucosa may regain an almost normal appearance. It is present as a rule in severe iron-deficiency anemia, with achlorhydria. In other deficiency states, such as pellagra, gastritis seems to be incidental to the disease. Cancer develops in an abnormal mucosa—often; perhaps usually, but certainly not always. Periodic gastroscopic and x-ray examinations of the stomach for all individuals known to have atrophic gastritis are recommended.

Cancer of the stomach must be suspected in all adults with indigestion. The distress of gastric cancer is unreliable. The physical examination usually reveals no significant positive findings. Anemia may or may not be present. Free HCl may or may not be present in the gastric juice. Occult blood is usually present in the stool. A positive or a negative x-ray diagnosis of cancer is usually correct; x-ray evidence may be inconclusive. Gastroscopy is helpful. Operation should be urged in all cases unless distant metastasis has been proved. Whether an ulcer is benign or malignant is often difficult and at times impossible to know. Failure of the ulcer to heal within a few weeks on an adequate medical regimen is presumptive evidence of cancer, as is the continued presence of occult blood in the stool. In patients with carcinoma, medical management may completely relieve the pain and the patient may gain in weight. Only rarely does the blood in the stool disappear and only very rarely does the crater of the ulcer diminish in size. The ulcer can never be assumed to be benign until it has proved itself to be so. Cancerous gastric ulcers should be treated by resection. Benign ulcers may be treated by resection very effectively.

Peptic ulcer occurs at some time or other in the lives of 12% of all persons. As a rule the diagnosis is easy; gnawing or aching, relieved by food, may be extremely atypical. Constipation may dominate the picture, or intermittent attacks of severe pain with profuse vomiting, simulating biliary colic or tabetic crisis. Vomitus is always acid and usually contains little or no bile. Pain may be absent and the lesion manifest itself by bleeding only, or by acute perforation, or by obstruction. Moynihan

wrote, "In peptic ulcer, the anamnesis is everything, the physical examination nothing." The laboratory examination is unimportant when negative, as it usually is. In chronic benign ulcer, acid gastric juice is invariably present, although one or more histamine tests may be required to find it. The diagnosis of benign ulcer should not be made if one is unable to find acid in the gastric content. The amount of acid varies greatly from time to time and any patient with acid gastric juice may have an ulcer, regardless of the amount present in the test meal. X-ray examination should be included in the routine examination of all patients with abdominal distress. Difference of opinion as to treatment is due in large part to the tendency of most ulcers to heal and recur spontaneously.

Two or three weeks of relative bed rest are indicated, and as much mental relaxation as possible. In some cases ambulatory treatment may be sufficient. Sippy's milk-and-cream and powder program is satisfactory. Calcium carbonate, 30 grains hourly, is a very efficient antacid. Magnesium oxide, $7\frac{1}{2}$ grains, or magnesium carbonate, 30 grains, may be substituted for the calcium as often as is needed for proper regulation of the bowels. Atropine (gr. 1-60 or 1-120) at 6 and 10 p. m. helps to control the night secretion. The routine aspiration of the stomach at 9:30 p. m. should be continued until the amount obtained is regularly less than 3 ozs. The progress of healing should be indicated by the prompt cessation of pain, disappearance of the occult blood from the feces, and by roentgenologic, and in the case of gastric ulcer, gastroscopic, evidence of decrease in the size of the crater followed in time by its complete disappearance. Treatment in a modified form should be continued for months and years in order to prevent if possible the recurrence of the lesion.

Acute perforation occurs almost exclusively in males (98%) and should be treated by immediate operation. Massive hemorrhage occurs in both sexes and is best treated by means of bed rest, with starvation if vomiting is present. After vomiting has ceased, milk at hourly or two-hourly intervals day and night until the stools are free of occult blood. Blood transfusions are indicated if the b. p. falls below 100 or if the red blood count falls below 3 million, or the pulse rises above 120. In certain cases of recurring massive hemorrhage, subtotal gastrectomy may be indicated when the patient is clinically well. Repeated attacks of massive hemorrhage occur before and after various types of operations.

The most frequent complication of ulcer requiring surgical treatment is obstruction, diagnosed by continued vomiting and gastric retention, and by the roentgenologic demonstration of a channel less than 3 mm. in diameter. The standard procedure

in these cases is posterior gastroenterostomy or gastroduodenostomy. The incidence of recurrent ulcer formation following these operations is approximately the same, 40%. Subtotal gastrectomy is becoming more popular, though it, too, is followed at times by recurrent ulcer formation. The medical and surgical treatment of such recurrent jejunal ulcers is extremely difficult. In a few cases we have had excellent success from roentgen irradiation aimed at the fundic portion of the stomach and designed to inhibit the secretion of acid gastric juice.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

THE SCARCITY OF THE GRADUATE NURSE

AS FAR as I have been able to learn practically all hospitals not running training schools are having difficulty in procuring graduate nurses. If this be true the nursing profession is standing on the brink of a precipice. Sick people require nursing. They are nursed by either their relatives and friends, or by practical nurses or graduate nurses. In hospitals nursing by relatives and friends is not practicable.

Hospital operators all over the country have been slow to accept practical nurses. In order to make it most unattractive for these individuals, hospitals have chosen to call them nurse maids in many instances. All this means that the hospitals have been very loyal to the nursing profession. They educate a young woman by making it possible for her to work her way through school. They create in her a new life and a new determination to serve mankind. Nowhere else can the same amount of education be obtained for so little cost. In no profession under the sun except in the nursing profession does yesterday's graduate obtain the same fees as does the girl who graduated ten years ago. [My observation is that family doctors graduated yesterday obtain larger fees than do family doctors graduated ten years ago.—J. M. N.]

Sick people have demanded graduate nursing service in most instances. Many times they have strained their pocketbooks to keep a registered nurse on when a practical or undergraduate nurse could have filled her place, but because she was loyal and appreciative of the tender and professional care during the very sick days the patient kept the graduate nurse. These considerations lay a responsibility upon the graduate nursing profession of producing sufficient graduate nurses to nurse the sick people in each community.

If the graduate nursing profession is to meet the challenge of an adequate nurse supply it must begin now—it should have begun several years ago. Instead of discouraging hospitals to open training schools it should encourage all hospitals which have an adequate staff and a reasonable number of patients, and which are approved by the American College of Surgeons and the American Medical Association, to open training schools at once. The Army and Navy are rapidly depleting the present supply of graduate nurses. A goodly supply of these will never reënter the profession for the reason that they will meet attractive young men who are now serving in the defense of the country, and will marry them. A reasonable number will remain in the Army or Navy. We are now graduating far less nurses than we did ten years ago. The demand for nurses is far greater than it was ten years ago.

If the graduate nursing profession does not supply the sick population of our Country with their services then it will take practical nurses in their stead. If they take practical nurses many of these will remain in the field at a lower fee but will satisfy a large proportion of the people. At least those who have never had graduate nurse service will not be capable of judging the value of that service in comparison with that which they are getting from the practical nurse. We cannot speak too plainly upon this matter. Sufficient urging must be brought to bear so that the leaders in the nursing profession will realize what a grave mistake they are making in attempting to reduce the number of graduates each year.

HISTORIC MEDICINE

THE MEDICAL ASPECTS OF SAINT-SIMON'S MEMOIRES

J. D. ROLLESTON, in *Proc. Royal Soc. Med.*

LOUIS DE ROUVROY, Duc de Saint-Simon, was born at Versailles, 1675, and died 1755. The *Memoires* cover the period 1694 to 1723, contain numerous passages of medical interest.

Smallpox is by far the most frequent of all the diseases mentioned by Saint-Simon, over 50 cases being noted, a large proportion fatal. The victims included Saint-Simon himself, his two sons, the Queen of Spain, and the Duc de Noailles who recovered, and the Emperor Joseph I of Austria, the Old Pretender's daughter, Saint-Simon's mother and sister and Monseigneur.

Since Jenner's discovery the disease has been almost unknown in the upper classes among whom objectors are rare. Sequelae were facial disfigurement of the Queen of Spain, Pontchartrain, and

Sieur de Neufchatel, loss of one eye or both eyes of Phelypenaux and Normoutiers and dementia in Mme Desmarests.

Seven cases of death in child-bed among the court ladies are mentioned. With the exception of the Duchesse de Melun, whose death was due to post-partum haemorrhage attributed by Saint-Simon to her refusal to be held in pregnancy, there is nothing to indicate whether the deaths were due to infection or not.

Malaria was prevalent at Versailles and Marly. Louis XIV was attacked. M. de Bauvilliers, Saint Simon says, was killing himself with cinchona to arrest an obstinate fever accompanied by a troublesome diarrhoea, a condition which may well have been typhoid fever.

Several references are made to the great epidemic of plague which occurred at Marseilles in 1720, spread over a large part of Provence, and did not come to an end until 1722. In 1723 the barriers were removed, commerce was reestablished with all foreign countries and thanksgivings were offered in all the churches of the kingdom.

Among chronic infections mentioned, syphilis under the name of verole holds first place. Particularly severe attacks of bone syphilis occurred in the cases of the Duc de Vendome and his brother the Grand Prior. Both the Duke and another eminent soldier, M. de Vaudemont underwent the "grand remedy" which produced abundant salivation. Louis XIV, though he was doubtless often exposed and undoubtedly contracted gonorrhoea, there is no evidence in the *Memoires* or elsewhere that he acquired syphilis.

Cardinal Dubois, one of the most profligate men of a licentious age, and the subject of genito-urinary disease for which he was operated on by the famous surgeon La Peyronie, was probably also another subject of gonorrhoeal infection.

The Duchesse de Berwick died of "Consumption" at Montpellier, where her husband had taken her for a change of air. The Duc de Caderousse who had long been very ill with his chest made a perfect recovery under the treatment by Caretti, a well-known quack, while Pere Valois, a celebrated Jesuit, and the Marquis de Saint-Simon, the oldest member of the writer's family, both died of a "chest disease", and "phthisie" carried off the Spanish Duc de Liria. The most remarkable case was that of Mme de Clerambault: "When young she almost died of a chest disease and was strong-minded enough to pass a whole year without uttering a word." It may not be generally known that an Honorary Fellow of this Society and a former President of this Section when suffering from laryngeal tuberculosis also adopted this silent regimen and made a complete recovery.

An example of King's Evil is afforded by Mme. de Soubise and several of her children who were all touched by Louis XIV but without success. Another instance of the King's Evil was that of the Queen of Spain. It did not, however, prevent her uxorious husband from sleeping with her until a few days before her death.

Leprosy is mentioned once, the patient being M. de Lavardin, lieutenant general of Brittany, who is said to have inherited the disease from the Rostaing family to which his mother belonged.

Among the most eminent of about 40 sufferers of gout mentioned were Louis XIV himself who had numerous protracted attacks, the Prince de Conti, M. de Boufflers and the Duc de Vendome.

Half a dozen cases of cancer were mentioned. In one of them (Mme. de Vieuville) it is stated kept the cancer secret until two days before death, and only her maid knew about it and dressed it, while in the other (Mme. Bouchu) the breast was amputated and the patient died many years later of pneumonia. The only case of cancer in a man was that of the Duc de Lauzun, in whom the mouth was the seat of the lesion.

About 40 cases of apoplexy are mentioned, the most notable subjects being La Bruyere, the Duchesse de Bouillon, and the Duke of Marlborough, of whom Saint-Simon relates that for more than three years he was no longer capable of anything.

Tics, examples of which were noted in Mme. de Nemours, tic of the shoulder; Duchesse de Châtillon, facial tic; Peter the Great, facial tic; and Don Michel Guerra—"In spite of good health he showed a strange ailment; his head turned convulsively to the left side. Usually this was slight but almost continuous with little jerks. Afterwards it increased and its violence was sometimes so great that his chin passed over his shoulder for a few moments, several times in succession. He did not get any considerable or long-standing relief except in the baths at Baresges.

An example of toxic-infective psychosis was the case of the Marquis de Maulevrier, who committed suicide by throwing himself out of a window during a maniacal attack in the course of pulmonary and laryngeal tuberculosis. Mme. Desmarests became demented after an attack of smallpox. The Duchesse de Charost died at the age of 51 after more than 10 years' illness without being able to be moved from her bed, see any light, hear the slightest sound, utter more than two words consecutively or change her linen more than two or three times a year, and always demanding extreme unction after such effort.

The mysterious condition known as "vapours," first described by the Abbe Testu, appears to have been a sort of neurasthenia. It is mentioned as occurring in seven other persons beside the Abbe,

all but one of whom were men; *viz.*, Chamillart, Pontchartrain, Louis XIV, the King of Spain, the Duc de Noailles, Mme. de Chevre, and the Duc de Veragua.

Cannan remarks that "there was nothing to do at Versailles except to contemplate the King's majestic person from morning to night." The most notorious example of collective alcoholism at this time was furnished by the suppers of the Duke of Orleans which were attended by his mistresses, and other society ladies of easy virtue, army officers and others whose pleasure lay in deep drinking, blasphemy and licentious talk.

Of a total of 13 operations mentioned in the *Memoires* those for stone in the bladder numbered five. The first was performed on Fagon, the King's physician, by Mareschal. Marechal de Lorges was operated on by the itinerant lithotomist Frere Jacques, who refused any other help or advice but that of Milet, a surgeon major in De Lorges' bodyguard. The Comte de Toulouse was successfully operated on by Mareschal, and made an uninterrupted recovery. Dangeau, who also wrote *Memoires*, in addition to operation for fistula in ano underwent two lithotomies.

The *Memoires* contain brief indications of three diseases long before they were described in scientific medicine. They have not received any mention in this historical account of the diseases in question. The first of these, which seems to be a description of achondroplasia, was that of the Abbe de Baudrun who presented the following appearance: "Being an absolute dwarf and extremely lame he joined the Church. In spite of his twisted legs and enormous head he was nevertheless very enterprising with women for winning whose favours he possessed great talents." This Abbe thus closely resembles the patient named Anatol described by Pierre Marie, who emphasizes the erotic tendencies of achondroplastics. The next case, which seems to be one of spondylitis deformans, is that of Joyeux, Governor of Meudon, of whom Saint-Simon's description is as follows: "His back remained flat, but it seemed to be broken down below where it stuck out and Joyeux walked as if he was folded in two." Lastly the case of the Comte de Beuvron, "who died very young, losing his blood by the pores of his skin, a disease about which very little is known by doctors," was obviously an example of haemophilia which, according to Bulloch and Fildes was "entirely undescribed as a distinct morbid entity before the beginning of the 19th century."

A centenarian, the Marquis de Mancera, a grandee of Spain, had the peculiarity of never eating bread or anything in its place and retained his health and mental faculties until the end.

The 18th century was the age of sexual athletes, the example being set by Louis XIV, whose powers

in this respect even at an advanced age made Mme. de Maintenon complain to her confessor. The palm, however, must be given, even if allowance be made for exaggeration, to the Abbe de Grandpre, of whom Saint Simon gives the following description: "He was a kind of imbecile and behaved just like one. . . . His body, however, was not like his mind, and women had given him the name of Abbe Quatorze."

Against the Marquis de Santa Cruz action was brought by his wife and divorce granted on the grounds of impotence. The wife was allowed to marry again. Shortly afterwards a girl brought an action against him for being the father of her illegitimate child, and gained her case, so that, as Saint-Simon remarks, he was not lucky in his law suits.

One of the dark sides of the resplendent age of Louis XIV was the frequency of real or suspected cases of poisoning, of which Saint-Simon reports numerous examples. Arsenic and perchloride of mercury were the drugs usually employed. On two occasions snuff was the vehicle in which the poison was administered. One case was that of the Comte d'Aguilar, a grandee of Spain, who was accused of having poisoned the father of the Duc d'Ossone by this means. The other was that of the Duc de Noailles who gave a snuff-box containing excellent Spanish snuff to the Dauphine who died after a few days' illness.

Salazat poisoned his wife, just as the Duc de Popoli did his, so that it was facetiously said in the Spanish court that to have poisoned one's wife was a necessary condition for achieving distinction. Ferdinand of Spain was suspected of having poisoned his son-in-law Philip the Handsome. In Spain the Comtesse de Soissons poisoned the queen, the poison being conveyed in milk. The death of Madame, Henrietta of England, the first wife of Monsieur, was ascribed without hesitation to poisoning. Saint Simon states that no one ever had any doubt about it. Subsequent investigations, notably by Littre, Cabanes and Nass, and Funck Brentano among others, indicate that her death was due to acute peritonitis from perforation of a peptic ulcer.

Louis XIV was born with two teeth, which had the effect of lacerating his nurses' nipples, and at an early age suffered from dental caries. Loss of his teeth caused the king considerable discomfort of which he complained one day during dinner to the Cardinal d'Estrees. "Teeth!" replied the tactful ecclesiastic, "who has any nowadays?"

DE LEE is credited with having said that in the birth of a child the pain has been greatly exaggerated. It might be worth while to take the testimony of doctors who have borne children. Then, maybe the women doctors would scout the idea that a kick in the testicles is painful.

OPHTHALMOLOGY

HENRY C. NOLLET, M. D., *Editor*, Charlotte, N. C.

COLOR OF THE EYES AND PUBERTY

THE COLOR of the eyes is due to the pigmentation of the iris, which, in 50 per cent of persons, changes its color several times during the early period of puberty.

Most children are born with a deep blue iris and its color changes in the early years of life. At birth the iris stroma, its anterior layer, contains but little pigment and is very thin, while the posterior or retinal pigment layer is seen through it giving the eye a bluish look. This is due to the same phenomenon that causes a dark background to appear blue when seen through a more or less opaque medium. As age increases the stroma becomes thicker and thicker and if its pigment does not increase the eye becomes light blue or gray, conversely if the pigment of the stroma increases the color of the eye becomes brown. Should there be no pigment either in the iris stroma or in its retinal layer the iris is then translucent and, on account of its many blood vessels, has a delicate grayish-red color. This condition is a part of a partial or complete albinism.

Normally, the color of the iris is proportionate to the pigmentation of the rest of the body, hence dark races always have a dark iris. Heterochromic eyes—one blue, the other brown—are occasionally seen and a chronic cyclitis with deposits on the cornea and cataract is more apt to develop in the blue eye. Why this predilection for disease of the lighter eye is not known.

Since the iris is formed by two concentric circles diversely colored, and the colors are distributed in the form of striae, specks, stippling and rays on a colored background, these appear, disappear and are transformed from one into another, until a more or less complete change in the primary coloration of one or both of the zones is often brought about. This evolution generally ends, without following any fixed rules, in a color lighter than the original color in both girls and boys.

Light eyes and delayed puberty are often accompanied by numerous changes. A judicial expert finds herein the key of the problem that develops when a delinquent aged 17 years no longer has the blue eyes recorded in his anthropometric chart made at age 15.

ADDITIONAL NOTE ON INCLUSION BLENNORRHEA

THE Editor of this Department wishes to congratulate Department Editor Nash on his clear, concise and timely discussion of Inclusion Blennorrhoea in the July issue of this Journal. It should be of special interest to all men doing obstetrics and pediatrics and it is hoped it will be read and

digested by many of those therein engaged. Prompt diagnosis of the disease obviates censure and embarrassment to the physicians concerned, to the hospital where the delivery was made and to the parents of the baby. Not infrequently the writer, when such a case was presented to him, has had to prove the existence of the disease, in contradistinction to gonococcal infection, and thereby relieve the censure imposed by the parents upon the physician or the hospital.

I wish to add a few remarks to what Dr. Nash has so well said.

The mucous membrane of the mouth of the cervix is identical in structure to that of the eye sac and in this particular area in the birth canal only is this so. Here the inclusion bodies lie. In order to prove the origin of the infection in the mother epithelial scrapings must be procured from this area. The inclusion bodies will not be found in the vaginal secretions, or obtained from any part of the vaginal mucous membrane. Epithelial scrapings from the eye sac are better procured and more safely by the use of some type of small semi-sharp curette. A specimen of the discharge from the sac will be negative. A blennorrhoea developing from the 5th to 7th day after birth is strong evidence against gonococcal infection. However, further proof is mandatory.

As an adjunct to treatment for control of ciliary spasm atropine in 0.25 per cent aqueous solution, 1 drop every other day in each eye sac during the first 10 days of the disease, is strongly indicated.

JEFFERSON ON ALCOHOL AS A BEVERAGE, ON NOT HUMORING HIS STOMACH, AND ON HARD STUDY

Monticello, December 13th, 1818

To M. de Neuville

I rejoice, as a moralist, at the prospect of a reduction of the duties on wine, by our national legislature. It is an error to view a tax on that liquor as merely a tax on the rich. It is a prohibition of its use to the middling class of our citizens, and a condemnation of them to the poison of whiskey, which is desolating their houses. No nation is drunken where wine is cheap; and none sober, where the dearth of wine substitutes ardent spirits as the common beverage. It is, in truth, the only antidote to the bane of whiskey. Fix but the duty at the rate of other merchandise, and we can drink wine here as cheap as we do grog; and who will not prefer it? Its extended use will carry health and comfort to a much enlarged circle. Every one in easy circumstances (as the bulk of our citizens are) will prefer it to the poison to which they are now driven by their government. And the treasury itself will find that a penny apiece from a dozen, is more than a groat from a single one.

I have been blessed with organs of digestion which accept and concoct, without murmuring, whatever the palate chooses to consign to them, and I have not yet lost a tooth by age. I was a hard student until I entered on the business of life, the duties of which leave no idle time to those disposed to fulfill them; and now, retired, and at the age of seventy-six, I am again a hard student.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

SPINAL ANESTHESIA

OF THE MANY KINDS of anesthetics available, spinal anesthesia, after many years, has been found very satisfactory when properly given. Persons not informed about anesthetics, and who have had an operation, will sometimes attribute certain subsequent symptoms or some complication to the spinal anesthesia. This is seldom justified.

Spinal anesthesia merely blocks the nerves and prevents pain impulses reaching the brain, in other words prevent the patient being operated upon from suffering pain. Many nervous individuals cannot bear the thoughts of being operated upon while they are awake. A patient who is being operated upon under spinal anesthesia usually has far less disturbance than does one being operated upon under ether or some other general anesthetic.

Sometimes people are told that paralysis and nervous symptoms or insanity follow spinal anesthesia. In our experience with more than 20,000 cases we have never known a case in which paralysis, nervousness or any disturbance of consequence developed after spinal anesthesia.

Spinal anesthesia is preferable for many reasons. Among them:

- 1) Freedom from pain during the operation.
- 2) Easily administered.
- 3) No bad after effects.

There are no after effects that amount to anything. There is no danger to the heart, lungs, liver, kidneys or central nervous system. In other words, spinal anesthesia, properly given, will cause no damage whatsoever to any part of the body. The mortality in surgery is less under spinal than under general anesthesia because of the fact there is no irritation of the lungs. There is no strain thrown upon the heart, and complications after the operation are far less frequent with spinal than with any other anesthesia.

Patients who come to us can have any form of anesthesia they wish, provided it is something that will be detrimental to them. However, for the majority of abdominal operations, spinal anesthesia is far preferable to any other form of anesthesia now available, and certainly there is no harm or damage to the body following its use.

Patients should not listen to the vague objections of unqualified persons ready to condemn something which they know nothing about.

THE TREATMENT OF SIMPLE EMPYEMA OF THE THORAX

MANY methods of treating empyema of the thorax have been devised. Many of them are good; some are impractical.

The treatment of empyema should, of course, begin with an accurate diagnosis and location of the pus and a carefully planned treatment. One of the first things is an aspiration to determine the nature of the fluid. If it is purulent, surgical treatment should not be undertaken until at least three aspirations have been done on each of three successive days.

During the World War, a number of inexperienced surgeons attempted to do rib resections in early empyema before the pus-cavity was walled off and before infiltration of the walls or mediastinum had occurred. Naturally, this resulted in many deaths. So great was the number of bad results that a general order then was issued that no rib resection and drainage of an empyema cavity should be performed until three successive aspirations had been done. This order immediately brought the mortality within normal limits.

In simple empyema in which there is a large pocket of thick, yellow pus, and often coagulated material, when this is once well walled-off and at least three aspirations have been done and the patient is in condition for the resection, a simple rib resection with drainage gives far better results than any other method of treatment.

To resect a rib at the point which will insure freest drainage and prevent the formation of a pocket of pus below the opening will give the best results. A rib resection carefully done and the cavity made so that it will tend to close up in due time gives gratifying results.

We do not use rubber tubing for drainage in empyema, but we use a rubber-tissue tubular drain, which is soft and does not irritate the parts with which it comes in contact—or at least the irritation is the very minimum.

Another important factor to keep in mind is the fact that aspiration at the time of operation is of great help. Rib resection should be sufficient to allow the large pieces of coagulated material to be removed through the opening. This is important. By aspirating all the purulent material and removing as much of the coagulated material as possible, we not only hasten healing but we make the patient far more comfortable and fewer dressings will be required. To make a simple opening, insert a drain and apply a large dressing, means a copious flow for days, often with soiling of the bed and sometimes the floor, making a very disagreeable experience for patient, nurses and orderlies.

Where the proper kind of suction is used, just as soon as the rib is resected and the chest opened, the purulent material can be removed. Following this, the cavity may be mopped out with gauze and the large pieces of coagulated material removed. The drain is then inserted and held in place with silkworm-gut sutures. This drain should be left in the proper length of time and when this is removed the drainage will continue until the infection has cleared up and the cavity is gradually filled by the expanding lung.

It must be remembered that every patient with empyema is a sick person. The greatest care is necessary in preparing him for operation. Every possible aid should be given. Blood transfusions should be used freely. Where there is a pneumonic organism present, the proper serum may be given. Sulfanilamide and sulfapyridine, or other such preparations, may be used with good results, especially in streptococcal infection.

We must remember, however, that in all these cases there is an interference with the respiration due to the partial collapse of the lung on one side, and any drug, such as sulfanilamide, should be used with caution. Lung exercises during convalescence are very helpful.

THE TREATMENT OF SYPHILIS

EVERY case of syphilis should be treated in a careful, methodical way. First, a careful history should be taken and every possible bit of information that will be helpful in deciding just exactly what the condition is should be obtained. Following this, serological tests should be made. They should be repeated if necessary.

Both a Kahn test and a Wassermann test should be done. While it is true that these tests do not always exactly agree, each gives helpful information, important in determining the course of treatment, and, above all, enables us to foretell, to some extent, what the outcome will be.

Then a detailed systematic schedule of treatment, to be followed closely, each treatment recorded and the reaction, if any, noted. Serological tests should be made and recorded at regular intervals, and a spinal fluid test should be made at the proper time. These tests enable us to gauge the progress of the treatment and they afford great encouragement to the patient.

One of the most difficult things in the treatment of syphilis is getting the patient to understand the importance of keeping to a regular schedule and continuing treatment until the doctor discharges the patient. So often we see a patient who has had a course of treatment with the disappearance of the initial lesion, or secondary lesions, and the patient feels that he is well and will have no further trouble; and years later this patient develop

a central nervous system condition due to syphilis, which is always a tragedy. The patient should be made aware of this possibility, if there is a tendency to carelessness in carrying out the treatment exactly as prescribed. The present educational campaign throughout the United States has done much to impress upon the average citizen the importance of this, and each year the treatment is followed better by the patient than ever before. This is a hopeful sign and we hope, as times goes on, that patients will be even more anxious to follow the prescribed course of treatment and continue this until the doctor discharges them.

There should be a spinal fluid test at the completion of treatment in every case. This is one of the most important things in determining the presence of an infection in the central nervous system. If the spinal fluid is positive, treatment should certainly be continued. Another problem that has come up is just what treatment should be given a patient who is in a position where human lives depend upon his ability to perform certain duties, such as driving a truck, car or bus. These patients should be most carefully studied from every angle. Before they are allowed to return to their usual occupation, it should be determined whether or not there is any danger of the development of a central nervous system lesion, which might be the cause of a tragedy later on.

As a rule, a patient who has an occupation of this kind should have treatment until there is no danger of infecting others. Following this, a spinal fluid test should be made, and also serological tests of the blood. If the spinal fluid test is negative, the patient may be returned to work early provided treatment is continued at regular intervals, taking the treatment on the days he is off duty. By following this plan, he can continue to work and earn a living and at the same time take the necessary treatment and obtain the best possible results.

The use of alcohol during the treatment of syphilis should never be permitted under any circumstances. Every patient should be warned of this and told just exactly what he may expect if he continues to use alcohol while the treatment is being given. Tobacco also should be forbidden.

The patient's confidence must be won. Let the patient know that you know what you are about and just what should be done. Let the patient understand just what you want him to do and that you expect him to do it, and, as a rule, you will get this cooperation. Let the patient know about the progress he is making from time to time. That will encourage him to continue treatment.

The public dissemination of information about syphilis by the Public Health Services and other

departments of the Government, and other forms of publicity, has done much to bring this subject to the minds of the people and has done much to cause patients to take thorough treatment.

It is possible that the importance of this has been overstressed in comparison with other diseases that do more damage but are less publicized. Anyway the public has been made conscious of the prevalence of this disease and the importance of proper treatment is known to practically every one who reads newspapers or magazines.

RADICAL AMPUTATION OF THE BREAST

THIS OPERATION presumably includes removal of the pectoral muscles and a careful dissection of the axilla with removal of the glands and the fatty tissue in the axilla. Radical mastectomy is rarely indicated. If cancer cells have metastasized beyond the original growth in the breast, the chances are that no radical axillary dissection will remove all of the glands and lymphatic vessels that contain cancer cells. At least it will not do any more good than a simple mastectomy plus simple x-ray treatment.

Palpable metastatic growths should be removed but a radical dissection removes the fatty and other tissue from around the vessels and nerves of the axillary region so that when healing takes place there is a constriction and pressure upon the veins causing a chronic, passive congestion of the arm on that side. In addition, pinching of the nerves causes a painful condition. Sometimes patients prefer death to the agony which even morphine does not relieve. Over a period of years of dealing with a large number of cases, I am convinced that better results are obtained in the vast majority of cases by a simple mastectomy followed by deep x-ray therapy.

Deep x-ray therapy may be given before operation with good results, especially in blocking the lymph channels and destroying the cancer cells which are radio-sensitive, especially those in the lymphatics and those on their way to points distant from the original growth. In carcinoma of the breast, an early diagnosis and a simple mastectomy supplemented by deep x-ray treatment gives excellent results.

While sometimes cures are effected, even in cases where there is apparently no hope, the fact remains that in the vast majority of cases of carcinoma with axillary involvement the patient will succumb to this disease, no matter what treatment is given.

Early diagnosis and early operation are the only hopes of obtaining a cure in these cases. Even in spite of educational campaigns as to the danger of lumps in the breast and advice to the laity as to just what to do, many women come in with a tumor in the breast, knowledge of which they have

concealed from their own family, but which they suspected from the first might be cancer. During the delay the growth has extended beyond the stage where a cure was definitely possible. Even though enlightened upon this subject, a good many will delay seeking medical advice. This is one of the peculiarities of human nature which must be kept in mind.

A CASE OF DIAPHRAGMATIC HERNIA IN A CHILD ELEVEN MONTHS OF AGE

A LITTLE GIRL eleven months of age was recently admitted to the hospital with a history of prolonged vomiting of food and a steady loss of weight—going down from 22 pounds to 11 pounds. The vomiting was not of the projectile type, such as found in pylorospasm and pyloric stenosis.

The general appearance was that of hunger and starvation. The general examination did not reveal a great deal of trouble except for the emaciation and weakness. As soon as food was taken a part or practically all of it would be immediately regurgitated. This condition persisted and it was thought advisable to give the child barium and make a fluoroscopic examination. This demonstrated that a large part of the stomach was in the left pleural cavity—a typical diaphragmatic hernia.

It was evident that surgical treatment of some kind was necessary in order to save the child's life, but it was so weak that any surgery was extremely hazardous. Several blood transfusions and glucose and saline were given and preparing as rapidly as possible for operation.

Under general anesthesia, through a high left-rectus incision, the abdomen was opened and the stomach was brought down from the left thoracic cavity into the abdomen. Careful exploration revealed an opening in the diaphragm of considerable size just to the left of the point where the esophagus comes through. This opening was carefully closed with four interrupted sutures. The abdominal incision was closed immediately and the child returned to its room in good condition. The operation lasted only a few minutes.

The patient was allowed to take liquids soon after operation and made a rapid recovery and was allowed to return home on the eighteenth day.

Diaphragmatic hernia occurs oftener than is suspected and this case illustrates the importance of x-ray examination of the stomach, even in infants, where there is prolonged vomiting. This also illustrates the importance of blood transfusions and intravenous fluids to restore the fluid balance of the body before any surgery is done.

Surgery in infants, especially those weakened by starvation from inability to retain food, is extremely hazardous, but the hazard can be greatly reduced

ed by giving repeated blood transfusions and other fluids by vein.

In surgery in children the greatest possible speed in operating, so far as is compatible with good surgery, should be kept in mind, as infants do not stand anesthesia and shock from operation very well; however, where an operation of this kind can be done in a few minutes there is a minimum of shock and a rapid recovery which, of course, is hastened by the fact that the child can take nourishment, retain it, and digest it in the usual way.

HYPOGONADISM

(Earl Floyd, et al, Atlanta in *Jl Med. Asso. Ga.* July)

A white boy, 16, with non-productive cough of two weeks' duration, had asthma for past five years. At 6 he was found to have left inguinal hernia and a weakened ring on the right, a bilateral truss has been worn almost continuously since.

Secondary male sex characteristics failed to appear, voice remained high pitched, genitals infantile, penis 3.5 cm. in length, no pubic hair, development of extremities poor and gait and mannerisms effeminate.

X-ray examination showed a small sella turcica, bony development that of 9 to 10 years. Weight 76 pounds; height 61 inches; chest circumference (expanded) 28½ inches.

Another physician had given a series of injections of antuitrin S, no favorable response.

He was given a high-calorie general diet and vitamin B complex for a few days. The vitamin B was then omitted so we could judge the effects of the hormone. Sept. 17th synthetic testosterone propionate, 25 mg., was given intramuscularly three times a week and 4 mg by injection each night. On the 26th definite change in the pitch of his voice; the testes were slightly larger; the penis now 5 cm. in length. He was having frequent erections but no emissions. He had gained 9 pounds in 9 days. On the 28th there was a beginning growth of hair over the upper lip and pubic region, discharged from hospital on the 29th, kept on the same treatment, continued erections, never troublesome. On Oct. 8th had his first emission. On Jan. 18th, 1941, the intramuscular dosage was reduced to 25 mg. twice weekly, the injection still to be applied nightly.

During the five months of treatment he received a total of 1450 mg. of hormone by intramuscular injection and 450 mg. by injection. His weight gain was 30 pounds, muscular development much improved, height has increased 2½ inches, chest circ. 5 inches. Increased calcification of the bones but no evidence of premature epiphyseal closure, as has been reported by some observers.

During the past winter, for the first time in five years, the patient had no asthmatic attacks. No treatment, other than testosterone propionate has been given.

The penis has increased from 3.5 to 9.5 cm. The prostate has developed to normal size for age. We have not been able to demonstrate spermatozoa; testes normal in size, good growth pubic hair.

We are now gradually reducing the dosage of the hormone and are working toward a maintenance dose.

SKIN DISEASE.—In any case inquire what drugs have been taken recently.

ASTHMA.—All wheezing is not asthma.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

CORRESPONDENCE ANENT THYROID CANCER

Dear Northington:

This letter with enclosure is for publication as the next material for The Clinic in S. M. & S. Meanwhile I'm off for the biggest vacation since I started practice, to the Pacific Coast, from Los Angeles to Vancouver. My good friend McKnight took what appears to be well-grounded exception to certain remarks of mine in the last number of THE CLINIC in S. M. & S. I enclose his letter with the request that you publish it, and my reply.

Here is a copy of my reply to McKnight's letter: Dr. R. B. McKnight,

Dear Mac:

Thanks a million for your valuable criticism. I wish more of it came my way. I must have slipped a cog—yea, two or three cogs! I confess I have practiced medicine over 26 years and have recognized just two cases of cancer of the thyroid, and I did not realize its frequency. Granting it is as frequent as you say, why don't we hear of more people dying of it? Anyway, I'm forwarding your splendid letter to Northington with the request that he publish it along with a copy of this letter, as the next outburst in THE CLINIC. Meanwhile, I'm off for a real vacation to the Pacific Coast for the month of August.

More than ever your friend.

(Signed) Fred.

Publication of this letter may stir up more interest in this subject and be of considerable value.

As ever, your friend,

Taylor.

Dr. Frederick R. Taylor,
High Point, N. C.

Dear Fred:

A statement of your appearing on page 381 of the July issue of *Southern Medicine & Surgery*: The last paragraph of the first column contains the following words: "a non-toxic adenoma of the thyroid - - - Let the goiter alone unless it begins to cause pressure symptoms or develop toxicity. Should it do either, consult a surgeon."

Please note the remarks in my address before the Section on Surgery at the recent Pinehurst meeting of the Medical Society of the State of North Carolina. It will appear in the next issue of the Journal. I have never seen a cancer of the thyroid, metastases excepted, develop in the thyroid *except in a non-toxic or mildly toxic adenoma!* Oh, sometimes it does occur in all likelihood, but it is extremely rare. The percentage of carcinoma in such goiters is between 5 and 12%, with the weight of

evidence in favor of the latter figure. All nodular goiters are surgical problems—I cannot compromise that statement. (There may be the occasional case where operation is extremely hazardous due to some other physical condition.) I think such advice as was given this woman is entirely in error and extremely dangerous and that its publication is worse! Now, maybe we can get into an argument and both of us learn something!

My very best wishes and highest esteem,

Sincerely yours,

Roy McKnight.

TREATMENT OF BURNS

BURNS make up part of the practice of all regular doctors. Pain makes their victims, pass up the culs. Read this abstract¹ and treat burns better.

There still is a large number of doctors who show their credulity in favoring complicated, expensive, and sometimes harmful methods, and their prejudice by resisting any attempt to simplify and improve their plan of treatment. In the treatment of extensive burns it may be necessary to combat shock, to supply liquids, to counteract toxemia, to prevent infection and to heal the denuded areas. These ends are met by bed, morphine sufficient for pain, heat by means at hand, and fluid by mouth, subcutaneously or intravenously. Nothing else should be done to the burns until the shock has subsided.

Prior to 1925 the author had used several unsatisfactory plans of treating burns. Too many of the cases had to be hospitalized, dressings were painful, infection was too frequent, convalescence protracted, death rate too high. This plan of treatment is based upon the local application of a saturated solution of tannic acid *in alcohol*. The solution does not deteriorate with time. The cost is 13 cents an ounce.

Burning bestows relative sterility, no scrubbing, no antiseptic except the alcoholic tannic acid solution. A coat of solution quickly wiped over the surface, causes severe stinging which begins to subside within few seconds, gone within two minutes.

The film is allowed to dry for five minutes, then a second coat which dries in 15 to 20 minutes, covered by loose sterile gauze held in position with bandage or adhesive tape. If the case does not require dehydration, send home and have return in two days for dressing. Gauze adhering to the thin eschar over the burn, leave in place. If some of the burned area is weeping, another coat of tannic acid solution is applied, allowed to dry, and dressed as before.

Dress every two or three days until exfoliation occurs. When the eschars separate, a clean, heal-

thy, granulating surface is left in contrast to exuberant gran. following aqueous tan. acid treatment. Shorten healing process by use of adhesive strips. Skin grafting as necessary.

The physician is able to carry in his emergency bag all the material necessary—alcoholic tannic acid solution, cotton, forceps, scissors, gauze dressing, bandages, and adhesive. He can dress an extensive burn in 20 to 30 minutes and be his way. It is economical to the patient not to have to pay for hospitalization or special nurses.

The burning renders the area relatively sterile, and the alcohol in the tannic acid solution is sufficient. Blebs are not opened unless on the palms or soles where they cause pain. No skin is removed, no milking resorted to.

Chilblains—Our method is to apply one or two coats, give the patient a bottle of the mixture to take home and apply when necessary. He never has to call on us again for help for that ailment.

A CASE OF STRONGYLOIDES STERCORALIS INFESTATION

(G. R. Bodon, Rochester, N. Y. in *Jl Lab. & Clin. Med.*, July)

A 45-year-old woman born in Italy migrated 20 years ago. Since that time she has lived in East Rochester. A long history of uncertain abdominal pain, vomited at times. In 1933 cholecystectomy and appendectomy, in 1935 and again in 1938 exploration for adhesions. Operations showed negative findings. One blood count in 1933 showed an eosinophilia of 10%.

On admission, Jan. 30th, 1940, she complained of colicky pain, starting in the right upper quadrant and sweeping across the abdomen to the left side, pain in the back, vomited bloody material. Examination negative except that pressure in the left lower quadrant produced pain in the epigastrium.

There was a slight hypochromic anemia, white count 6,000 to 8,000, 25% eosinophiles.

First stool examination did not show any parasites, but a large number of Charcot-Leyden crystals; stool examination after saline laxative showed numerous wriggling nematodes, 200 to 300 microns long, the first rhabditoid larva of *Strongyloides stercoralis*. In the incubator the larvae developed into the strongyloid forms. On repeated stool examinations larvae were always found. A skin test with trichinella antigen was positive in 1:1,000 dilution.

Treatment was duodenal lavage and gentian violet tablets, 1 grain three times daily. The patient was not co-operative; she left the hospital and repeated stool examinations still show the presence of the parasite.

The parasite was found in the husband's stool. Husband had eosinophilia of 10%; he did not show any other symptoms which could be related to the presence of the parasite.

D. H. Nisbet reported¹ a case in which the worm caused obstructive jaundice.

A case of an Italian immigrant woman is presented in which the stool examinations revealed rhabditoid larvae of *Strongyloides stercoralis*. It may be assumed that the parasite caused uncertain abdominal symptoms for which the gallbladder and the appendix were removed. Later two laparotomies were performed for the persistence of symptoms thought to be due to postoperative adhesions. All operations resulted in negative findings.

1. R. T. Richards, Salt Lake City, in *Ry. Mt. Med. Jl*, July

1. *Southern Medicine & Surgery*, vol. 94, (1932)

SOUTHERN MEDICINE & SURGERY

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

A THREAT OF AUTOCRACY

SEVERAL months ago the editor learned of what looked suspiciously like autocratic action on the part of the American Board of Surgery. About the same time it was noted that from a good many directions were coming recommendations and prophecies that after a while the diploma of this Board would be a requisite to hospital surgical staff membership. At the time we decried such a program as high-handed and impracticable.

This Board is self-constituted and self-perpetuating. A number of first-class surgeons may be found among those who got together and said, Let there be a Board, and there was a Board. A great many first-class surgeons have been given the stamp of approval of the few who made the Board by fiat. Many first-class surgeons have shown no interest in the Board, one way or another. Some surgeons have been denied the accolade, who, according to general repute among profession and laity, are better surgeons than a good many to whom it has been said, Enter Brother and abound.

And in some instances the Board has been extremely vague in answering the question, very respectfully put: In what way does my record fail to meet your requirements?

We have no idea but that the main purpose of the organizers of this Board was the laudable one of improving the quality of the surgery practiced in this Country; neither do we doubt that considerable quantities of pomposity and joy in being exclusive—[*excludo*=I shut out] might be found could one analyze the motivation.

Back in April, in reply to this statement: "Ultimately every one intending to do major surgery, to be eligible for staff appointment in an accredited hospital, will have to be certified by the Board," we ventured this opinion:

How ridiculous it would be for this Board to attempt to keep a first-class surgeon off the staff of a hospital on the vote of a third-class surgeon! Besides all the first-class surgeon would have to do would be to go into court and force the hospitals to accord him his rights in them.

Practitioners of medicine can get on pretty well without hospitals. Practitioners of surgery, though they could do much more of their work than they do in their offices to the advantage of their patients, must have hospitals for many of their patients.

It is within the bounds of possibility that the States may, one-by-one, erect boards in surgery and the other specialties, and require examination at the hands of these law-erected tribunals of those who would set up as specialists. It is incredible that any such exercise of authority on the part of a self-constituted and self-perpetuating body would ever be tolerated.

An Editorial in *Southwestern Medicine's* issue for June has this to say:

In a report to The House of Delegates at the recently concluded session of The American Medical Association, the Reference Committee on Miscellaneous Business—

..... evidence of unnecessary irritation among the rank and file is becoming evident. It is hoped that the House of Delegates will not feel that this reference committee is exceeding its functions if it suggests that the Council on Medical Education and Hospitals may have made a mistake in permitting the specialty boards to slip out from under the control and jurisdiction of the American Medical Association. Perhaps it is not too late, by proper contact methods, to reestablish such control.

Justified or not, unfavorable criticism of the conduct of certain Specialty Boards is becoming widespread. Many young men feel that those already certified by these boards have, in some cases, promulgated an unnecessarily high standard of requirements to be met by today's candidate—standards that have in no case been met by those now possessed of the magic certificate. This accusation leads to the charge that a few men in high places are attempting to set up closed guilds in their fields. Substantiation of this charge is said to be indicated by the moves of certain boards to obtain Government regulations allowing only their own members to do certain work for Government agencies. This is privilege-seeking, says the current comment, and is held to be contrary to all notions of democracy in medicine.

In self-defense of an inherently splendid conception of the duty owed the public by the specialists of this country, it would seem that the Specialty Boards would welcome a reassessment of their conduct by the only competent authority—The American Medical Association. These acts of a few zealous could easily destroy the delicately based confidence now reposed in the Specialty Boards by the public and the medical profession at large. Such a happening would be regrettable.

A highly-educated doctor, a member of the National Board of Medical Examiners and at that time Dean of a Medical School, was heard to say that he could not gain entrance on credits and could not possibly make a passing mark on the examination required for entrance on the study of medicine in his own school.

Of course, schools can require whatever they choose; but, once the medical student becomes a Doctor of Medicine in due form, the State decides as to his qualifications for the practice of medicine as a whole or in any of its parts, and as to his duties and rights therein.

Privilege seeking? Certainly, and on all-fours with John L. Lewis' demand that nobody be given a job who is not a paying member of his union.

FALLACIES IN THE TREATMENT OF HEART DISEASE

THE PEOPLE and the doctors are being given a lot of information and a lot of misinformation about disease in general.

Dr. Paul White¹ writes to correct a good many items of misinformation.

When things are not going well in the face of much drug or other therapy, try a rest day or two or three without any medicines at all. Do not use many vigorous agents at one time.

Heart disease itself is not the cause of palpitation in the large majority of cases. Common causes are fatigue, nervous strain, overeating, coffee, tobacco, alcohol, thyrotoxicosis. Reassurance is in order. For frequent recurrence, quinidine sulphate three or four times a day is usually far better than digitalis.

Do not give digitalis to a person simply because he is short of breath.

Precordial pain is in the majority of instances not due to heart disease. Do not put persons with heartache to bed or give them morphine unless you are very sure they need it.

Substernal oppression is often not angina pectoris but due to spasm of stomach or esophagus, to be treated by belladonna and diet rather than by rest and nitroglycerine. Also in such cases omit tobacco and nerve strain, and give large doses of reassurance.

Syncope and faintness are most likely to be due to vasomotor instability.

All these various symptoms in one person mean neurocirculatory asthenia.

Cyanosis is commonly due to pulmonary disease rather than heart disease. Fast pulses do not require digitalis, unless they result from auricular fibrillation, or flutter. A slow pulse rate, even in the forties, requires no treatment per se, even if heart block is present; only if the block is unstable with pulse dropping low enough to threaten the patient with syncope (a very rare occurrence) is treatment needed. Otherwise a slow pulse is a decided asset.

Low blood pressure, even systolic constantly near 100, is an asset. If the pressure has dropped from 200 to 100 one has another situation, but even so, such low pressure is not to be treated unless complicated by symptoms or other signs.

Edema of the legs is in the *minority* of cases due to heart failure. It is most commonly the result of local circulatory fault, with or without varicose

1. P. D. White, Boston, in *New Orleans Med. & Surg. J.*, May

veins, phlebitis, or marked obesity.

Twice as many patients receive digitalis as need it, twice as much as necessary is given to many of those who do need it.

Give only enough morphine to cardiac patients, even with coronary thrombosis or acute pulmonary edema, to dull the pain or dyspnea. Morphine and its allies, pantopon and dilaudid, often cause depressing or nauseating effects which can be harmful.

Do not rush to try every new remedy suggested in the treatment of coronary disease with insufficiency. None of them is of great value—either drugs, or surgery, or x-radiation. The old stand-bys of rest and the nitrites are still the best, although in a few instances aminophyllin and nerve injections seem to help. Radical measures like total thyroidectomy and implantation of new blood supply have not proved their worth, nor has radiation of the adrenal glands.

SAVE GASOLINE AND LIVES

THE GOVERNMENT is asking all its citizens to use gasoline more economically; this as a feature of defense of our liberties, of our very existence as a Nation.

Over many years this journal has urged, as a means of returning to us the liberty to use our own highways in reasonable safety, and of continuing our existence as individuals and families for the normal expectancy, a measure which would, as a by-product to the saving of life and limb and automobiles and horses and buggies and wagons, save more gasoline than Mr. Ickes says there is need for us to save.

Murder and robbery by wholesale has become commonplace in our large cities; yet the perpetrators go scatheless, so long as they pay into the United States Treasury as income tax the lawful percentage of said unlawfully, murderously acquired income. Mayhap our very noble and approved good masters and rulers will be moved to adopt, as a means of saving gasoline, a measure for saving both gasoline and life, in which they showed no interest so long as only the life-saving feature was emphasized.

I

Everybody above the mental age of five knows that the chief element in automobile killings is fast driving, and that much more gasoline (and oil) per mile is consumed at high speeds than at reasonable speeds.

On the 7th day of the past June a peaceful citizen, with his wife and daughter, was driving quietly along on his own side of an excellent highway 35 miles from Charlotte. At a point where the road had no horizontal curve for miles in either direction, where there was no intersection, no farm or

home road from which he should be on the lookout for vehicle or pedestrian, as he came to the top of a slope—gentle from his side, steep from the killers' side—two brothers, both in their twenties, racing at 75 to 90 m. p. h., side-by-side, and filling the whole road, crashed into him and each other. This law-abiding citizen, riding on his own highway on a peaceful mission, exercising every precaution against accident, awakened days later in a hospital to learn that his wife and daughter had been buried.

Within the present month a good citizen of Union County driving in his buggy along the highway near his home was foully done to death by the fast, reckless driving of a biped without feathers in the uniform of the United States Army. The excuse was that he "came over a little rise" and couldn't stop before crashing into the rear of the good farmer's buggy and killing man and horse. This slaying occurred at about 1 p. m., when there could be no possibility of "sun in my eyes," or "his lights blinded me." The road is straight on and the "slight rise" is slight indeed, so slight that, if he had been looking, the driver could have seen the buggy a half-mile away. The other occupant of this deadly-weapon Government car was a Lieutenant U. S. A.

According to the papers two lieutenants were recently sentenced to a year or so's imprisonment for swooping down, in a Government plane, over an Alabama turnip-patch and cutting off the head of a farmer's wife, working in her own field. Others working with her saved themselves by dropping flat on the ground. The idea of these jolly, care-free lads was to "give the rubes a scare." What a horrible crime! And how absurdly inadequate the punishment! It is to be hoped that the widower will bring a civil action against these wanton murderers and get enough to educate his children and to make it unnecessary that he and his go out in the field to be exposed to decapitation to afford entertainment to city slickers. If the culprits do not have sufficient property to satisfy a heavy judgment, the Government should supply the difference.

Not even in a man's own field are he and his family safe from speed maniacs.

Instances of wanton speed killing might be multiplied almost indefinitely.

It is not recommended that airplanes be equipped with governors. The plane incident is cited as an illustration of what the speed mania developed on the ground, in automobiles, leads to.

What is this simple, inexpensive, efficient means of saving gasoline and life? A speed governor which will not allow a car to travel faster than the rate at which it is set. Cities and towns can pass ordinances at any time, awaiting the meeting of

State legislatures. If every car found in any incorporated place in any State, without a governor, were confiscated, there'd be precious few 60- to 90-mile-an-hour boys and girls on our highways a month from now.

Somebody will say: But what about a car's ability to go up a hill when it has a governor attached? The answer is: a governor does not come into action until the speed at which it is set is reached, whether travelling on level ground, going up-hill or going down-hill.

II

In May, 1927, this journal carried this editorial:

SAFER SWIMMING

As summer advances we may confidently look for a rising tide of death by drowning. Some of these accidents will occur in the surf, and some in rivers and creeks; but the majority of the drownings will be in artificial pools.

Many deaths in water, ascribed to drowning, come about in other ways. There is little reason to believe that being in water will materially affect the tendency to loss of consciousness which is conspicuous on land.

In the last month a fourteen-year-old school girl lost her life in a swimming pool at High Point; two years ago a young man was taken from the Charlotte Y pool dead; five or six were drowned in pools in the vicinity of Charlotte in the past summer.

Some months ago, while passing a near-by pool, the editor conceived the idea that a net could be spread on the bottom of such a pool—in sections if size makes this necessary—with attachment by ropes to windlasses for immediately bringing up any one who has gone under. In the car with me was a doctor who enjoys the water immensely despite the fact that he is but an indifferent swimmer. Immediately he said he thought it an excellent idea and entirely practicable; adding, "I know I would feel a whole lot more comfortable in swimming if I knew there was such a net under me."

The cost of such paraphernalia would be prohibitive, and it is reasonable to assume that the additional patronage induced by the removal of the element of danger would far more than pay for the outlay. Then there is always a chance of suits to be defended and probably judgments paid. Finally, the most important consideration is the saving of life.

Will anything be done along this line? We do not expect it. Will the papers carry their usual summertime narratives of the drownings of men, women and children? We confidently predict that they will.

There's not a reader of these words who cannot recall a number of instances since they were written in which life would have been saved by the adoption of this recommendation.

A case in point is quoted from the *Rutherford County News*, of July 27th:

Ray Hollifield, 15, and Charles Bradley, 17, lost their lives Sunday night in the swimming pool at the Club House here.

It was reported that the boys had been caddying on the golf course and took a swim about 7:45 p. m.

Hollifield was reported to have had an attack of cramps while swimming and Bradley, who already had gotten out of the pool and dressed, jumped in with his clothes on in an attempt to save his chum. However, Hollifield pulled him under.

Several other boys who were present, including Paul Lee, a half-brother of Hollifield, Bud Moore and Yates Ledbetter, attempted to rescue the drowning youths without success.

Large crowds attended both funerals. Both were buried in the city cemetery. Both graves were covered with beautiful flowers.

This tragedy cast a cloud of sadness over the community and is a warning to all to be "careful."

How pathetic? How resigned! How futile!

When Dr. J. P. Matheson was beautifying his place out on the Concord road his lawyer told him he must put a strong fence about the lake; or, if trespassers went swimming there and lost their lives, he would be actionable for "Creating an Attractive Nuisance." Matheson said that it was news to him that he could be made to pay for what might happen accidentally to one who trespassed on his property, not only without his consent, but despite being warned to stay off.

Since such is the law, it would seem that, since the owners and operators of such attractions have been informed in detail of a cheap and ready means of assuring against such tragedies, an action would lie against any club, resort, amusement park or swimming-pool which did not install such equipment and keep it in good working order.

We are being constantly told that this is the day of Preventive Medicine, that it is the duty of private practitioners, as well as health officials paid out of our taxes, to save people from sickness, injury and death.

Here is another of my own efforts along this line, this, too, backed by the same quality of faith as that held by the one who prayed: "Lord, I believe; help thou mine unbelief."

HOLMES A PRECURSOR OF FREUD

(C. P. Oberndorf, New York, in *Bull. N. Y. Acad. of Med.*, May)

"There are thoughts that never emerge into consciousness, which yet make their influence felt among the perceptible mental currents, just as the unseen planets sway the movements of those which are watched and mapped by the astronomer. Old prejudices that are ashamed to confess themselves, nudge our talking thought to utter their magisterial veto. In hours of languor, as Mr. Lecky has remarked, the beliefs and fancies of obsolete conditions are apt to take advantage of us. We know very little of the contents of our minds until some sudden jar brings them to light, as an earthquake that shakes down a miser's house brings out the old stockings full of gold, and all the hoards that have been hid away in holes and crannies."

SUDECK'S ACUTE BONE ATROPHY

(A. J. Mourou, Washington, in *Med. Ann. D. C.*, July)

In a very small percentage of cases acute osteoporosis occurs within a short time following injury. It may follow a slight injury and is most common in the bones of the wrist, hand, ankle and foot. The predominant symptom is pain. Typical x-ray findings clinch the diagnosis. The pathology is obscure. Treatment consists of deep x-ray therapy, or periarterial sympathectomy, supplemented by physiotherapy. Recovery requires many months.

BOOKS



COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, edited by RICHARD M. HEWITT, B.A., M.A., M.D.; HARRY L. DAY, Ph.B., M.D.; JAMES R. ECKMAN, A.B.; A. B. NEVLING, M.D.; JOHN R. MINER, B.A., Sc.D., and M. KATHARINE SMITH, B.A. Vol. XXXII—1940. 1190 pages with 210 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1941. Price \$11.50.

Not all the papers published by members of the Mayo Clinic in the previous year are republished in the Annual Collected Papers. Many of the total are in abstract, some included by title only, others not at all.

Nowhere may be found in one volume a better presentation of the best medicine of the year.

THE MARCH OF MEDICINE: New York Academy of Medicine Lectures to the Laity, 1940. *Columbia University Press*, Morningside Heights, New York. \$2.00.

Essays deal with some of the important aspects of the history of medicine; the development of care of the mentally sick or inadequate; bronchocopy; what we know about the blood and its disease conditions; about the wonderful working out of the successful use of chemicals in defending our patients against the attacks of some of the deadliest bacteria.

The number of scientific and historical data studied and interpreted to the public is enormous. It is shown that doctors and other medical men, now, as in all previous times, are laboring prodigiously to, in the words of Oliver Wendell Holmes, "to promote the best earthly interest of mankind;" and that these labors are being eminently successful.

Contents: Preface: 1. The Inheritance of Mental Disease, by Abraham Myerson, M.D.; 2. Chemical Warfare against Disease, by Perrin H. Long, M.D.; 3. The Story of Our Knowledge of the Blood, by Paul Reznikoff, M.D.; 4. The Story of Viruses, by Thomas M. Rivers, M.D.; 5. The Ascent from Bedlam, by Richard H. Hutchings, M.D.; 6. The Romance of Bronchoscopy, by Chevalier Jackson, M.D., and Chevalier L. Jackson, M.D.; Index.

NECROPSY: A Guide for Students of Anatomic Pathology, by BELA HALPERT, M.D., Assistant Professor of Pathology and Bacteriology, Louisiana State University School of Medicine. *The C. V. Mosby Company*, St. Louis. 1941. \$1.50.

First is described the external examination, then examination of the different organs and systems in situ, then removal and examination of the different organs. Examination of the base of the skull, of the tympanic and nasal cavities and the sinuses is included.

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This 75-page booklet is an excellent guide for the use of coroners and other physicians who have occasion to perform necropsies and to submit tissues and organs to pathologists for microscopical examination.

THE CARE OF THE AGED (Geriatrics), by MALFORD W. THEWLIS, M.D., Attending Specialist General Medicine, United States Public Health Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; Special Consultant, R. I. Department of Public Health. Third Edition, entirely rewritten; with 50 illustrations. *The C. V. Mosby Company*, St. Louis. 1941. \$6.00.

An interesting and instructive chapter of expressions of opinion of medical men and philosophers on the physical and mental peculiarities of the old constitutes the introductory. That the aged have been neglected as to health care, and that, for various reasons, this neglect is being remedied, are points well set forth.

There are chapters on hygiene, prevention of premature senility, prolonging life, sex life, allergy, infectious diseases in the old, the old man's urinary troubles, his metabolism, neurology, skin diseases, cancer and many others.

A very important subject, and one which is yearly becoming more important, is presented in an authoritative and scholarly way. It would be hard to think of a way in which any doctor could better spend six dollars.

THE MARCH OF MEDICINE: New York Academy of Medicine Lectures to the Laity, 1940. *Columbia University Press*, Morningside Heights, New York City. 1941. \$2.00.

Five years ago the New York Academy of Medicine inaugurated a course of Lectures to the Laity which has been continued to the present. This booklet contains the lectures for the fifth year. Among the subjects discussed are the inheritance of mental disease, chemical warfare against disease, the story of our knowledge of the blood, viruses, the ascent from bedlam, the romance of bronchocopy.

These subjects, of themselves, proclaim their great interest for all persons. The excellent manner in which these subjects are covered makes the volume a valuable addition to any school or public library. This volume, all previous volumes, and any to come should be taught in the public schools and placed in every public library for the correct instruction of the general public as to what can and what cannot be done in medicine, and as to how and by whom this slowly- and painfully-acquired knowledge was gained.

It would not be amiss for the various States' Board of Health Bulletins to carry a large part of the contents of these volumes in their monthly issues.

CLINICAL IMMUNOLOGY BIOTHERAPY AND CHEMOTHERAPY in the Diagnosis, Prevention and Treatment of Disease, by JOHN A. KOLMER, M.S., M.D., Dr.P.H., Sc.D., LL.D., L.H.D., F.A.C.P., Professor of Medicine, Temple University School of Medicine; Director of the Research Institute of Cutaneous Medicine; and LOUIS TUFT, M.D., Assistant Professor of Medicine and Chief of Clinic of Allergy and Applied Immunology, Temple University School of Medicine. 941 pages with 27 illustrations (including 11 color plates.) *W. B. Saunders Company*, Philadelphia and London. 1941. Price \$10.00.

Here are clearly explained how living agents produce disease; the nature of natural and acquired immunity; antigens, antibodies, phagocytosis, anti-toxic and anti-bacterial immunity; anaphylaxis and allergy; diagnostic reactions; active immunization and vaccine therapy; passive immunization and serum therapy; bacteriophage therapy; methods of diagnosis and treatment of allergy; blood transfusion therapy; nonspecific protein therapy; chemotherapy.

The second half of the book gives in detail the practical applications of immunity, biotherapy and chemotherapy in the prevention and cure of various diseases.

Dr. Kolmer speaks with authority on many subjects. His book is a balanced consideration of this important group of subjects.

QUINIDINE AND DIGITALIS

(Graham Asher, Kansas City, Mo., in *Med. Times*, July)

Therapeutic indication for digitalis are:

1. Congestive heart failure without bradycardia.
2. Auricular fibrillation or flutter with rapid ventricular rate.
3. Therapeutic test in impending failure in cardiac overstrain such as hypertension of chronic valvular disease.

Contraindications are:

1. High-grade heart block with Adams-Stokes syndrome.
2. Hypersensitivity with previous digitalis poisoning.
3. Neurocirculatory asthenia and collapse after severe infection and anesthesia.
4. Hyperthyroidism.

Therapeutic indications for quinidine:

1. Auricular fibrillation in young hearts without congestive failure. To regularize after thyroidectomy.
2. Multiple premature contractions where hyperirritability is known and toxic factor removed.
3. Auricular flutter immediately following digitalization.
4. Occasional paroxysmal auricular tachycardia after digitalization has failed.
5. Ventricular tachycardia.
6. In coronary thrombosis, in the hope of lessening myocardial irritability, prophylactic against ventricular tachycardia and fibrillation.

Contraindications are:

1. Congestive heart failure, since quinidine has a depressant effect on the myocardium.
2. Quinidine sensitivity.
3. In known depression of respiratory center.

Indications for simultaneous administration of digitalis and quinidine are: thyroid crisis with auricular flutter of fibrillation, and rapid ventricular response with congestive failure.



ADSORPTION OF ACID

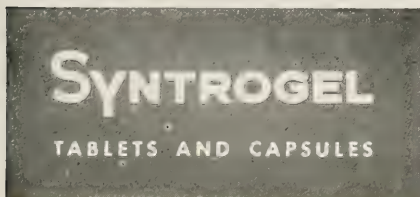
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antispasmodic), calcium carbonate, and bismuth subcarbonate. Peppermint flavored.

The tablets are small, pleasantly flavored, and they can be easily chewed, or dissolved on the tongue, or swallowed whole. Their effect in relieving hyperacidity is immediate. The usual indications include relief of gastric hyperacidity or flatulence; symptomatic relief of peptic ulcer; gastric neuroses; dyspepsia due to mental upsets; dietary indiscretions; intolerance towards certain foods; gastric disturbances due to tobacco or alcohol; gastric inflammations. Tablets: (Sanitaped) in boxes of 48 and 96. Capsules: boxes of 50 and 100.



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NEWS

DR. JAMES FRANKLIN BLADES announces the opening of his offices for the practice of General Surgery at Richmond, with offices in the Medical Arts Building and the Medical College of Virginia Hospital.

DR. PAUL M. DEATON has become a member of the medical staff of the H. F. Long Hospital of Statesville. Dr. Deaton is a native of Statesville, a graduate in medicine of the University of Pennsylvania, and he has just finished an internship in the Lankenau Hospital in Philadelphia.

DR. WALTER J. LACKEY, of Fallston, has returned from Chicago, where he took an intensive course in Rectal Diseases. For a number of years Dr. Lackey has been taking care of these needs of his patients, and this course's objective was obtaining familiarity with most recent developments.

DR. W. B. HUNT, of Lexington, has been appointed by Governor Broughton a director of the North Carolina Railroad Company.

DR. W. DEB. MACNIDER, Professor of Pharmacology in the University of North Carolina Medical School, has been elected president of the Society for Experimental Biology and Medicine for the coming year.

DR. OSCAR LEE MILLER, of Charlotte, has been elected to honorary membership in the Argentine Society of Surgeons.

DR. CLAUDE C. COLEMAN announces that Dr. JOHN M. MEREDITH, formerly of the department of neurological surgery University of Virginia, has returned to Richmond and is now associated with him in the practice of Neurological Surgery.

DR. OSCAR BILLETER, formerly of Chicago,, is the new resident surgeon at Hugh Chatham Hospital, Elkin, N. C.

DR. JAMES WALTER BROWN, JR., son of Mr. and Mrs. J. W. Brown, of Gatesville, has started on a year's internship at Orange Memorial Hospital, Orange, N. J. Having received his degree in medicine at Duke University this spring, he has in the succeeding months done intern work at Watts Hospital, Durham.

Two of the new buildings of the NORTH CAROLINA HOSPITAL FOR NEGROES at Goldsboro have been named for two members of the Board of Trustees—Graham Woodard, of Wilson, and C. P. Aycock, of Pantego.

MARRIED

Miss Jane Carrington, of Richmond, and Doctor Edgar Sevier Lotspeich, Jr., of New Orleans, July 19th.

Miss Mary Frances Bauman, of Raleigh, N. C., and Dr. Vincent Wilcox II, of Georgetown, D. C., July 21st.

Dr. Neuval Virso Cutchins, Jr., of Atlanta, and Miss Ann Kaufelt Christian, of Richmond, were married on July 12th.

Dr. Anthony Mealy De Muth, of Pittsburgh, and M's Morton Holladay, of Farmville, Virginia, were married on July 12th.

Dr. Arthur N. Springall and Miss Bernice Trout, of Ancon, Canal Zone, were married on June 16th.

Miss Vera Alice Hanson, of Richmond, and Doctor Alvah Duckett Doughton, of Falls Church, Virginia, July 18th.

Dr. Thomas J. Holt, Jr., of Warrenton, North Carolina, and Miss Lela Manning, of Bainbridge, Georgia, were married on July 19th.

DIED

Dr. W. Bernard Kinlaw, of Rocky Mount, N. C., was killed in an automobile accident July 24th.

Dr. Kinlaw, a graduate of the University of North Carolina in the class of 1914, received his M.D. degree at the University of Pennsylvania. As a heart and chest specialist, he practiced at Rocky Mount 1924 to 1937, since then he had practiced in New York State and in Boston, Mass. He returned to Rocky Mount in January, 1941. He had been president of the Edgecombe Medical Society, president of the Nash County Tuberculosis Association and aided in the formation of the Kiwanis Tuberculosis Clinic and the Rotary Heart Clinic. Before removing from North Carolina he was active in the affairs of the Tri-State Medical Association.

Dr. Edgar A. Pole, 71, died July 19th at a Charlottesville hospital. He had practiced for 35 years at Hot Springs, Va.

Dr. W. C. Hearin, 54, of Greenville, S. C., died suddenly July 9th, while making rounds at St. Francis Hospital.



Dr. Claude Ernest Simons, of Wilson, and Miss Margaret Smith Moye, of Goldsboro, were married on August 5th.

MEDICAL COLLEGE OF VIRGINIA

Faculty promotions for the fiscal year beginning July 1st are as follows:

Dr. Webster P. Barnes from associate in to assistant professor of surgery.

Guy W. Horsley from associate in to assistant professor of surgery.

Lawther J. Whitehead from assistant professor to associate professor of radiology.

Thomas D. Rowe from assistant professor to associate professor of pharmacy.

Rudolph Thomason from associate in to assistant professor of ophthalmology.

Delbert A. Russell from assistant to instructor in radiology.

Edward A. Delarue, Jr., from assistant to instructor in medicine.

John P. Lynch, Jr., from assistant to instructor in medicine.

W. Hughes Evans from instructor to associate in obstetrics.

W. C. Winn from instructor to associate in obstetrics.

Walter J. Rein from assistant to instructor in ophthalmology.

William A. Johns from instructor to associate in surgery.

Robert V. Terrell from instructor to associate in proctology.

E. I. Evans from assistant to instructor in surgery.

John Robert Massie from assistant to instructor in surgery.

Charles M. Holmes from instructor to associate in urology.

Miss Edna J. Townsend, from instructor to associate in pediatric nursing.

Mabel Blount from assistant to instructor in dietetics.

Harriet Stevens from assistant to instructor in dietetics.

Dr. Allen Pepple from assistant to instructor in dermatology and syphilology.

St. George Tucker from assistant to instructor in medicine.

Miss Ann Parsons and Miss Edna Townsend, who have been on leave of absence for study, returned to the school of nursing on July 1st.

Dr. William T. Sanger, president, attended the Institute for Officials of Higher Institutions at the University of Chicago the second week in July.

The psychiatric section occupying a whole floor of the new hospital was opened July 21st. Thirty-eight beds are available.

The Association of American Medical Colleges has accepted the invitation of the college to hold its annual meeting here, October 27th-29th.

Gifts and grants to the college for the fiscal year ending June 30th totaled \$366,844.34.

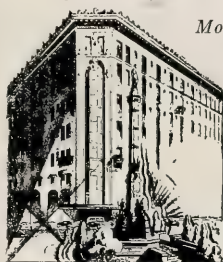
URINARY FINDINGS

(Wm. Elliott, Virginia, in *Minn. Med.*, July)

In the absence of definite findings in cases of obscure abdominal distress cystoscopy is an easier way to approach the problem than by exploratory operation. Even though cystoscopic examination is not resorted to, the routine urinalysis could be supplemented by high speed centrifuging and the growing of cultures, procedures which are not technically difficult, but which would frequently disclose the presence of active disease of the genito-urinary tract as evidenced by the number of cases of pyelonephritis in which positive urinary findings were found by these methods.

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Aspirin Phenacetin Caffeine

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RUPTURE OF THE INTESTINES FROM NONPENETRATING INJURIES OF THE ABDOMEN

(J. R. Veal & E. B. Barnes Washington, in *Med. Ann. D. C.* July)

The frequency of rupture of the intestines from non-penetrating injuries of the abdomen presents an urgent problem. The diagnosis of an intestinal rupture must be made in many cases by the simple fact that it cannot be ruled out, rather than by positive evidence of its presence. By the adoption of such an attitude and through the insistence upon immediate exploration many lives will be saved. In exploring the abdomen the entire intestinal tract must be examined. The surgery in the majority of cases will consist of the simple closure of the rupture and aspiration of the escaped fluid.

DOCTORS USE OF AUTOMOBILES

(Editorial in *Northwest Med.*, July)

The Automobile Manufacturers Association in its bulletin *Automobile Facts* for June reports a recent survey of physicians' use of automobiles. Doctors, according to this survey, drive more miles per year than any other group except traveling salesmen, the average being nearly 13,000 miles. Doctors make more round trips than any other group, averaging nearly a thousand annually. Ninety per cent of the number of trips are described as being for professional use, while sixty-six per cent of total mileage is reported as for necessity purposes. In rural areas half of the professional trips of physicians average more than 15 miles, while in the cities four out of 10 physicians average the same or more.

In comparison the report states that annual mileage

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Physician's Samples (limited) 60c each.

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of traveling salesmen runs slightly less than 19,000 miles, while farmers drive their cars less than 6,000. Farmers make 392 necessity trips per year, while doctors make 947. Both maintain the same percentage of total mileage devoted to necessity trips, namely sixty-six per cent. Physicians average 40 miles in pleasure trips, while the general average of professional trips is 10 miles.

Finally, physicians trade in their cars more frequently than do most groups. Eighty-nine per cent of the group surveyed drove cars less than five years old and one-third owned cars a year or less in age.

THE COMBINED ALKALOIDAL TREATMENT OF PARKINSONISM

(A Simon & J. L. Morrow, Washington, in *Med. Ann. D. C.*, July)

The product used is known as Rabellon and was furnished by Sharpe and Dohme of Philadelphia. Rabellon is a synthetic preparation containing in 0.5 mg. of alkaloids: hyoscyamine 0.45 mg., atropine 0.037 mg., and scopolamine 0.012 mg.

A group of 32 patients (25 with postencephalitic parkinsonism and 7 with other extrapyramidal disorders) were treated with Rabellon.

After treatment for 2 days to 5½ months—there were 14 unimproved, 4 slightly improved, and 7 moderately improved in the postencephalitic group. In the group with other extrapyramidal disorders, 6 were unimproved and 1 slightly improved.

The symptoms ameliorated were rigidity, gait difficulties, speech disturbances, sialorrhea and tremor.

The details of treatment with Rabellon and the possible complications have been discussed.

PUZZLING ABDOMINAL PAIN

W. C. Alvarez, Rochester, Minn. in *The Recorder of the Columbia, S. C. Med. Soc. July*

The consultant sees many persons with puzzling types of abdominal pain which his experience tells him are not due to any demonstrable disease in the abdominal cavity. In such cases he can say that an exploratory operation is likely to do more harm than good. It may well be that there are abdominal neuralgias just as there are head neuralgias, pains which arise in nervous tissue with no demonstrable cause. Some pains are probably due to chemical disturbances in the tissues. In this connection one thinks first of the sore, tender liver or colon of many nervous women.

Burnings, particularly in Jewish patients, are almost always paresthesias in the abdominal wall, and they are seldom relieved by any operation.

It is helpful to find that a pain is not related to any phase of digestion. When there has been no sign of obstruction in the digestive tract, no hemorrhages, there is a low blood sedimentation rate and roentgenograms of the stomach and bowel, are negative, the physician had better stop thinking of a lesion in the digestive tract.

Stabbing and aching abdominal and thoracic pains that are made worse by sitting or lying down are usually spondylitic. Pains due to spondylitis are extremely common and are seldom diagnosed properly.

When a Sippy cure does not promptly bring relief, the pain is probably not due to peptic ulcer. Pain not relieved by a good dose of morphine is likely not due to demonstrable disease in ureter or kidney or gallbladder.

Watch for the equivalents of migraine: painful abdominal storms with much prostration, mental suffering, perhaps vomiting, perhaps duodenal stasis, and only a mild headache; attacks usually come when the patient is under nervous strain. In the presence of these curious types of pain and distress, little abnormalities in the roentgenograms of stomach or bowel must be disregarded.

Pain in the left upper quadrant which is not related to any part of the digestive cycle is usually without macroscopic cause and is commonly incurable. Occasionally, if it comes with exercise after a large meal in a man past 40, it is due to coronary thrombosis.

Pain above the pubes may be due to disease of the posterior urethra or the prostate.

If the patient has never had an attack of acute appendicitis, pain in the right lower quadrant can rarely be cured by an appendectomy.

Certain pain syndromes should make the diagnosis from a typical history and not from the fact that the laboratory and roentgenologic and specialists' reports are negative.

TYPHUS FEVER

J. L. Thompson, Jr., Washington, in *Med. Ann. D. C., July*

Typhus fever is transmitted to man by the bite of an infected body louse or rat flea. The endemic form is prevalent in the Southern United States.

Characteristic are sudden onset, continuous high fever of two weeks, a rash on the 4th or 5th day, first on the trunk, prostration; and often delirium and other severe nervous manifestations. A positive Weil-Felix reaction in high dilutions is given. There may be either bronchitis or bronchopneumonia.

For the Eastern type of Rocky Mountain spotted fever the vector is the dog tick, and the disease occurs in the late spring and summer, whereas endemic typhus fever, transmitted by the rat flea or body louse, is seen toward the end of winter. The onset of the two diseases is practically identical. The history of the finding of a full tick on the person is an important clue in the beginning of the illness, pointing to a diagnosis of Rocky Mountain spotted fever. In both diseases a rash appears on the 4th or 5th day; in typhus fever on the trunk, spreads peripherally, and does not appear on the face. In Rocky Mountain spotted first on ankles, wrist and forehead and spreads towards the center. In both diseases rose-colored macules which disappear on pressure and which later become brownish-red or purple. Areas of hemorrhagic necrosis may appear in either disease. Each lasts two or three weeks and resolves by lysis. The patient with typhus usually appears more ill.

There is no specific treatment for either disease. Symptomatic and supportive measures are all that can be offered. Prophylaxis for Rocky Mountain spotted fever consists in stripping the body of clothes once or twice each day and removing any ticks, care being taken not to crush them between the fingers. The yearly use of vaccine for persons liable to exposure is advised. As for typhus fever, persons working in rat-infested areas should keep scrupulously clean and should have their working clothes treated frequently with dry heat or steam. There is no accepted method of vaccination.

A THEORY AS TO HYPERTENSION

(A. Ravich, Brooklyn, in *Med. Times, July*)

A kidney pelvis of the fetal type, i.e., an intrarenal pelvis which is almost completely surrounded by renal tissue, predisposes to hypertension. Enlargement of the intrarenal pelvis due to obstruction or infection compresses the neighboring renal vessels and leads to renal ischemia and hypertension. Excretion urography is of utmost importance in the diagnosis, prognosis and treatment of "essential" hypertension. In addition, it is possible by this diagnostic procedure to determine at an early period those individuals who are most likely to develop hypertension.

TOP MINNOWS destroy the larval forms of mosquitoes in the dark as in the light.

CHUCKLES

AND 40 YEARS AFTER THE CIVIL WAR YOU
COULDN'T GET A VET INTO A HOSPITAL
UNLESS HE WAS UNCONSCIOUS

(Ciba Symposia)

On June 10th, 1861, the Secretary of War appointed Dorothea L. Dix Superintendent of Female Nurses of the Army, vested with full power to assemble and train a corps of army nurses. Miss Dix had circulars published citing the qualifications necessary for army nursing candidates. They read in part: "No women under 30 years of age need apply to serve in government hospitals. All nurses are required to be very plain looking women. Their dresses must be brown or black, with no bows, no curls, no jewelry, and no hoop skirts." One of the replies to this circular said: "I am in possession of one of your circulars, and will comply with all of your requirements. I am plain looking enough to suit you, and old enough. I have no near relatives in the war; no lover there. I never had a husband, and am not looking for one."

Shakespeare had heard his star actor, Richard Burbage, make an appointment with a woman, at her room, after the play. "When I knock you will ask 'Who is there?'; and I will say: 'King Richard!'" (the part he was playing). Shakespeare, having finished his minor part before the end of the play, slipped out and anticipated Burbage. When Burbage spoke his password, "King Richard," the voice of Shakespeare was heard from within: "William the Conqueror came before King Richard; so begone."

Doctor: "Was your wife's reducing diet a success?"
Husband: "Rather! She disappeared completely last Thursday."

"I'll never take you to another party as long as I live," she fumed.

"Why?" the doctor asked in amazement.

"You asked Mrs. Jones how her husband was standing the heat."

"Well?"

"Her husband has been dead for two months."

"Mandy, what you need is birth control."

"Oh, no, ma'am," Mandy replied, "that's all right for you but I'se married."

Physician (attending A. M. A. Convention): "May I have some stationery?"

Hotel clerk (haughtily): "Are you a guest of the house?"

Physician: "Oh, no! I'm buying it, paying twenty dollars a day!"

Professor (who has spoken for two hours): "I shall not keep you much longer. There is no clock in the room, and I must apologize for not having a watch with me."

Student: "There is a calendar behind you, doctor."

"Doctor, what should a woman take when she is run down?"

"The license number, madam, the license number."

Patient: "Well, have any of your childhood ambitions been realized, doctor?"

Doctor (father of a large family): "At least one of them—it was always my desire to wear long trousers; now I believe I wear them longer than anybody else."

A doctor's wife decided to give a formal reception, so she summoned her maid to give her instructions, saying: "Molly, I want you to stand at the drawing room door and call the guests' names as they arrive."

"Very good ma'am," said Molly happily. "I've been wanting to do that for years. I suppose the first thing that comes into me head will do."

SUICIDAL ATTEMPTS

(D. M. Palmer Columbus, O., in *Jl. Nerv. & Mental Dis.*, 93: 421, 1941)

The motivations for the act are to be found in the personality structure of the individual to a far greater extent than in the present environment to which person appears to be maladjusted.

The alleged "cause" of the average suicidal attempt is often only a precipitating event.

An arrest in psychosexual development appears to be the basic mechanism in a majority of suicidal attempts. This arrest is often due to the unavailability of one or both parents as love-objects, as "stepping-stones" in psychosexual development, and as active forces in super-ego formation.

Spite as a motive is, at least in some cases, a rationalization of a deep-lying defect in psychosexual development rather than a direct incitement.

VALUE OF "ENRICHED" FLOUR IN AMERICAN DIET

Margaret Fewters, et al in *Proc. Staff Meetings Mayo Clinic*, July 2nd

This study was begun in October 1940 to learn the relative nutritive values of (1) white flour, (2) white flour fortified with thiamine and riboflavin, and (3) a whole-grain flour. At the time of the beginning of the study "enrichment" of flour and bread had not yet been recommended, which explains our failure to study flour fortified with nicotinic acid.

Weaning white rats caged in groups of eight animals were allowed free access to the diet and the amounts of diet consumed were measured.

Evidence derived from studies of the growth of rats indicates that substitution of whole-grain wheat flour for white flour in the preparation of human diets materially improves the nutritive quality of a "poor" diet.

Enrichment of white flour with thiamine alone improves the quality of the "poor" diet; enrichment of the flour with both thiamine and riboflavin improves the diet yet further.

Flour must be enriched with nutrients other than thiamine and riboflavin to obtain a flour of nutritive quality comparable to that of whole-wheat flour. The effect of enrichment of flour with nicotinic acid as well as thiamine and riboflavin is the subject of a study now in progress.

SEVEN-MILE JUMPS

(Jane Stafford in *Science News Letter*)

Occasionally a plane dropping destruction from 35,000 to 40,000 feet above the earth's surface does not get away safe.

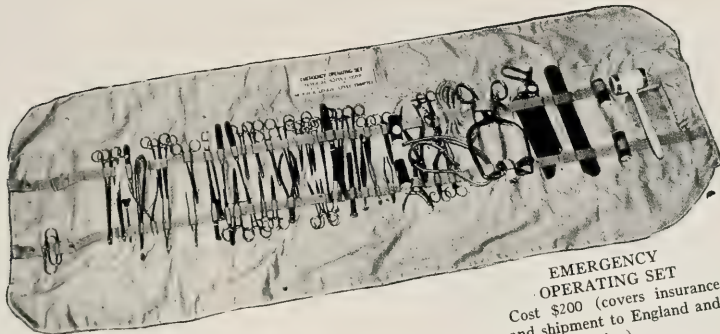
Walter M. Boothby, of the Mayo Clinic, states:

"If he gets into a dogfight up in those high altitudes, and his plane bursts into flames, he is a gone duck unless, after bailing out, he can be kept alive for at least 10 minutes with oxygen until he floats down to the 18,000 level."

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Passenger units have thermostatically controlled heating and air conditioning, are insulated throughout. Judicious use is made of a number of advancements favoring gracious living. A good part of the luxury picture appears in the comfortable seating arrangement in all cars, the commodious and up-to-date dining car arrangements and the facilities for *en route* enjoyment offered in lounge, tavern and observation rooms.

Diesel locomotives for the trains are built by the Electro-Motive Corporation, a subsidiary of General Motors.

Particularly interesting from the standpoint of detailed comfort planning is the fact that chair cars have twin-rotating, reclining-type seats, cushioned and attractively finished. The dining car has accommodations for 48 persons in satin metal framed chairs with rubber seats and back cushions. Settees, lounge chairs, writing desk, card section and refreshment facilities have been planned to fit the comfort and utility requirements of passengers in the Lounge-Tavern-Observation unit.

A rich decorative treatment has been designated for all units of *THE SOUTHERNER* the basic colors being blue, green and beige in light, medium and dark tones. Blue and beige are distributed in straight chair car planning, each car carrying out variations of the same color treatment throughout. Partition chair cars emphasize beige and the Baggage-Dormitory-Chair Cars are done in tones of blue. Green is the predominating scheme in dining car and Lounge-Tavern-Observation units.

The whole scene is enriched with an attractive arrangement of photo-murals which have been especially planned to heighten the atmosphere of luxury and beauty in *THE SOUTHERNER*.

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JAMES M. NORTHINGTON, M. D., Editor

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No. 9

Some Refinements in the Extracapsular Method of Extraction of Uncomplicated Senile Cataract with Preliminary Iridectomy

NEILSON H. TURNER, M.D., Richmond

THE THEME of this article is the improved application of long-known principles, which when properly employed, in the overwhelming majority of the cases, results in an excellent cosmetic effect, in a shorter postoperative convalescence, and in an improved visual acuity in many patients that otherwise would fail to get it.

Since the advent of the Smith-Indian operation at Jullunder, India, in 1895, the intracapsular method of extraction has gradually increased in popularity; but when considered from the standpoint of immediate or end-results, the reason for this is difficult to find. In any type of cataract extraction, irrespective of whether it is a series of cases by one or a group of individuals, if a considerable percentage of the patients, because of excessive and unnecessary traumatism of the ciliary region and of the cornea, are confined to the bed for two weeks or longer; if there is in some cases, careless spilling of vitreous, resulting in degenerative changes in some of these eyes with vitreous opacities and retinal detachment; and if not a very few preoperatively favorable cases, with their proper correcting lenses, get only 20/40 or less, it is not an indication of competent ophthalmic surgery. Unfortunately the unlucky patient is the victim.

I will not go into detail about the preparation of the patient, as that is the same in all cases in which an extraction is to be done. It is essential to thoroughly examine to discover any condition which might affect the outcome unfavorably.

In the preparation of the operative field, except to have as thorough cleansing and sterilization of the area as is compatible with safety, little will be

said, as its manner of accomplishment depends on the choice of the operator.

To allay uneasiness and control nervousness, one of the barbital compounds may be given from twenty to forty minutes prior to the time of operation, or other satisfactory hypnotics may be used. All members of the morphine group should be rejected because of their tendency to cause nausea or vomiting.

The instillation of one drop of 4 per cent cocaine solution, followed at three-minute intervals by two of a 10 per cent solution, with the subconjunctival injection four or five mm. above the limbus of two or three minims of the 4 per cent solution or of a 4 per cent preparation of novocain, will produce in practically all cases anesthesia for the preliminary iridectomy.

With the speculum in position and the eye supported by a suitable fixation forceps, a four-mm. angular keratome incision is made in the cornea in the vertical meridian above, just anterior to the limbus and on a plane parallel with the anterior surface of the iris. The fixation forceps is now removed, and the closed blades of a Mathieu's or Liebreich's type of iris forceps are passed through the wound until within one mm. of the pupillary border, then opened for $1\frac{1}{2}$ mm. and the iris caught and carefully pulled through the corneal incision until enough is exposed to include the sphincter iridis. This portion is then excised. If the sphincter is left intact, an iris hook can be used to expose it for cutting. With the iris reposer the cut edges of the iris should be gently stroked away from the wound. One per cent sterile atropine solution should then be instilled, White's ointment ap-

plied and a dressing placed over the eye. It is not necessary for the patient to stay in the hospital following this operation, but he or she should remain quiet until the second day. The atropine is to be continued until all irritability has disappeared, which is usually within two weeks.

Done in this manner, a narrow coloboma results, which, as it is obscured by the upper eyelid, gives an excellent cosmetic effect and little disturbance from photophobia. It is not necessary to wait for the cataract to become fully mature before doing the preliminary iridectomy.

While immature senile opacification of the lens can be operated upon by the extracapsular method, prudence based on experience says that it is usually best to wait until the cataract is about ripe, even in persons over sixty-five years of age. Following the iridectomy the eye should be quiet before an extraction is attempted.

Excellent local anesthesia is provided by injections of 2- to 4-per cent novocain in 1:10,000 adrenalin chloride solution intraorbitally, subcutaneously in the upper and lower eyelids at the orbital margin, and in front of the external auditory meatus (O'Brien's akinesis) on the side of the eye to be operated upon, along with the local instillations as for the iridectomy, except that the subconjunctival injection of the 4-per cent cocaine solution is made a few mm. above the limbus directly preceding the making of the corneal incision.

With the speculum in position and the eye held in proper place by a fixation forceps, the corneal incision is made for the upper one-fifth of the circumference, ending in a conjunctival flap at or below the site of the subconjunctival injection of cocaine of not over two or three minims. More would interfere with the making of the flap, whereas the necessary amount facilitates it. The fixation forceps is now removed. The wound can be enlarged by the use of narrow-bladed, blunt-pointed scissors. This procedure lessens the possibility of damage to the iris.

To split the anterior layer of the lens capsule, a Knapp cystotome is drawn temporally and nasally in arc formation near the periphery of the lens, meeting above, and then carried in the form of an *X* in the central portion. No pressure is to be applied in making these incisions. A wide exposure facilitates delivery of the lens substance and hastens absorption of any remaining cortex, removing one of the factors in the production of so-called after-cataract—the retention and regeneration of lens cells between layers of the capsule.

Gentle pressure directed slightly upward applied below at the limbus by the back of a lens spoon, or better by a smooth, curved lens expeller, should result in the upper periphery of the lenticular body appearing at the wound. The point of pressure on

the anterior corneal surface should be gradually raised until it is expelled. No pressure by the blunt end of a hook is needed or desired. Trauma must be minimal, that there may be no distortion, and later failure to get an expected visual acuity with proper lenses. By gentle upward stroking any remaining cortex may be expressed; or it may be carefully washed out, using an anterior chamber irrigator and half-normal saline solution. Any lens substance or capsule in the wound should be removed, the iris is restored to its normal position away from the cut edges of the incision, 1-per cent sterile atropine solution is instilled, the cut edges of the cornea carefully approximated and the conjunctival flap gently replaced. These manipulations are done with the iris reposer. No conjunctival stitch is necessary. The speculum is now removed very gently, first from the lower and then from the upper lid, after pulling the blade slightly forward and then downward so as not to disturb the corneal section. If necessary, the upper lid is now caught by the lashes, pulled forward to prevent contact with the wound and then downward to close the eye. Tape to keep the eyelids closed is now applied without pressure, White's ointment is used in both eyes, a light dressing applied over the eye operated on and a fairly tight but not uncomfortable one over the other eye, and a Ringer's mask placed in position.

On making the pressure below at the limbus to remove the lens, if it fails to appear promptly inspect to determine the cause. The upper periphery of the lens may impinge on the iris, which in turn is blocked by the cornea. Moving the cut edge of the cornea forward slightly with the iris reposer will promptly correct the trouble. Posterior synechiae may require passing the blade of the fine iris reposer into the posterior chamber at the coloboma, and then toward the pupil between the iris and the anterior layer of the capsule. It may be that the corneal section is not large enough to allow the lens to come out, in which case it is necessary to enlarge it.

The postoperative care in these cases is very simple—to lie flat on the back, not moving the head at all, and liquid diet for the first twenty-four hours. Following this the head may be turned to the side of the eye not operated on for rest, and the food may be of the soft and liquid varieties. Unless there is some trouble the eye is not opened until the fourth day. At this time the tape is removed, 1-per cent atropine solution instilled, White's ointment applied, a light dressing placed over the eye, and the cut-out portion of the Ringer's mask which covered the eye is placed over it and securely held in position by ample adhesive tape. The other eye is now left open. General diet

may be given after the fourth day, and the attention directed given until the patient leaves the hospital on the sixth or seventh day. During the hospital stay, special nursing care is necessary, as the patient must not get up or out of the bed for anything. After leaving the hospital, it is necessary to see the patient every second day for a week or ten days, then every several days until all signs of congestion have disappeared, which is usually within another two weeks. Atropine instillations should be continued until the eye is quiet.

The very small number of operations required for after-cataract can be accomplished (after anesthesia similar to that for the preliminary iridectomy and ample dilatation from atropine) by making, through a 5- or 6-mm. angular keratome incision just anterior to the limbus above, two vertical arc-shaped cuts in the lens capsule, with their concave sides toward the pupillary center and as far apart as prudence will permit. They can be made with a sharp knife-needle or with a fine, narrow-bladed cataract knife. The closed blades of a Bourgeois type of capsulotomy forceps are then passed into the anterior chamber, opened and the part of the capsule between the two incisions grasped, rotated and the rolled section brought out through the wound opening. A pair of capsule forceps, the blades of which open in scissors fashion, may be used, catching the section of the lens membrane below and breaking its attachment, then grasping it near its upper pole and pulling it out through the corneal opening. The eye is dressed as for the iridectomy above and the after-care is similar.

It is better to wait for two months or more from the date of the operation before ordering the permanent lenses. This allows time for any permanent effect on the refraction resulting from cicatricial changes in the corneal wound to become manifest.

Done in this manner by those adept at ophthalmic surgery, the consistently good results obtained with a minimum of operative complications, the comparatively short postoperative period, the good cosmetic effect and the excellent visual results in the overwhelming majority of the cases, far outweigh the disadvantages and will be highly gratifying to the ophthalmologist and to the patient.

SOME MENTAL PROBLEMS OF AGING AND THEIR MANAGEMENT

(Winifred Overholser, Washington, in *Med. Ann. D. C.*, June)

In cases of this type we must not over-invalidate the patient. Forgetfulness may be made less conspicuous by encouraging the patient to carry a scratch-pad with him, and some form of mild activity should be required. On the other hand, it is often necessary to relieve the patient of physical activities on account of his increasingly poor judgment.

Frequently in the large-vessel type of sclerosis cerebral hemorrhage occurs, often preceded by periods of vertigo and transitory loss of muscular power in an extremity. If the patient survives the hemorrhage he will often be found to have shown considerable increase in his mental symptoms. At this point encouragement is extremely important to prevent a tendency to self-pity and a feeling of hopelessness. Sometimes, instead of a typical cerebral hemorrhage, rather serious epileptiform or apoplectiform attacks occur with only transitory paralyses following, but usually succeeded by marked confusion. Patients of this type often deteriorate mentally rather rapidly, and it may be entirely impossible to care for them in the home.

Mental changes, however, frequently occur in persons who survive this era of life without marked arteriosclerosis. Dotage may begin as early as 65, whereas from time to time very aged persons are found who are apparently unscathed mentally. The borderline between dotage and definite disorder is a shadowy one. A psychosis in an elderly person may be precipitated or aggravated by serious illness or by a surgical operation. He may develop the idea that the family are trying to be rid of him, are trying to secure his property, and otherwise are discriminating against him; unfortunately, on some occasions this is no delusion. Generally the basis for such ideas is thoughtlessness and lack of sympathy on the part of the rest of the family.

A patient of this type often makes a comfortable adjustment outside of the home, particularly with other elderly persons with whom he may feel at ease. Delusions of poisoning may interfere with the eating habits of the patient. Some of the acute senile deliria respond amazingly to vitamin therapy.

A tendency to doze after meals and at odd times and at night be wakeful may develop into night prowling. Feeling chilly, a patient may attempt to light a fire, sometimes with serious results. Patients of this type, unless they respond favorably to warm baths and drinks at bedtime, or to hypnotic medication, require institutional care.

One interesting type of senility is presbyophrenia, a condition in which the disorder of memory is covered up by free confabulation. The patient may not remember where he was 10 minutes before, but rather than admit this he evolves a fanciful story which may be suggested to him by the examiner or may be evolved from his own fantasy. Sexual advances either in the line of fondling or exposure of person may be made upon very small children.

Mental hospital care should be thought of for cases of mental disorder in the aged only as a last resort and after every attempt at home care or nursing in a nursing home or some similar institution has been exhausted. Many of these patients are suffering from a condition which is irreversible and progressive, and by the very inelasticity of old age they do not adjust well to new conditions of life.

With the progress of these changes all of the ingenuity of the practitioner and all of the sympathy and understanding of family and friends are called for.

TRIGEMINAL NEURALGIA

The injection of 2% procaine solution into the exact point located by the patient as the area whence all pain seems to arise has been of great benefit to a series of trigeminal neuralgia patients. The temporary relief obtained often becomes permanent after the injections are repeated two or three times. In some cases, the injection of one zone will unmask a second zone, which should also be infiltrated with the local anesthetic.—W. K. Livingston, in *West. J. Surg., Ob. & Gynec.*, Aug., '40.

A WET SOLUTION OF ALCOHOL AND GLYCERIN 3:1 makes an excellent wet dressing to keep a wound soft, maintain drainage, and prevent infection.

Oophorrhagia*

Analysis of Nine Cases

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THE PURPOSE of this paper is to report cases of ovarian hemorrhage and to congratulate Castallo and Feo¹ for suggesting *oöphorrhagia* as the descriptive term for this clinical condition.

The word *oöphorrhagia* is derived from the Greek—*oon*, egg + *phoros*, bearer + *rhegnymi*, I burst forth—a bursting forth from the ovary. The ending, *rrhagia*, by common usage denotes hemorrhage, the origin of which is denoted by the stem of the word. Future references will be more easily obtained from the literature if this term is adopted and used. There is no doubt that this condition will be reported much more frequently in the future than formerly. The lengthy descriptive diagnoses formerly used are conflicting and difficult to index. For an example, as one of us looked back through the records of nine cases these seven different post-operative diagnoses were found: (1) Ruptured right ovary; (2) Ruptured bleeding left ovary; (3) Bleeding left ovary with peritoneal cavity filled with blood; (4) Left cystic bleeding ovary; (5) Ruptured bleeding hemorrhagic right ovarian cyst; (6) Bleeding left ovary (three times); (7) Right tube ovarian disease with bleeding ovary. The literature is filled with lengthy titles, such as: intra-peritoneal or abdominal hemorrhage of ovarian origin,^{2,4} acute hemorrhage from corpus luteum and graafian follicle³, hemoperitoneum from ruptured corpus luteum⁵ etc.

Oöphorrhagia is that condition in which there is bleeding from an ovalutary site. The amount of hemorrhage varies from slight to profuse and from intraovarian to the free peritoneal type¹. The authors' cases were all of the type with bleeding into the peritoneal cavity producing clinical symptoms.

Bleeding in a normal-looking ovary without the formation of cysts⁶ is found to be more common than has been supposed. In most cases it does not produce well-defined diagnostic symptoms and it is only when blood passes freely into the abdominal cavity that the clinical picture becomes distinct⁶. Acute hemorrhages simulate those from extrauterine pregnancy. In the severe cases exploratory laparotomy is demanded at once. In four of the authors' cases life was saved by immediate operation.

The number of ovarian hemorrhages reported has grown rapidly. In 1917 Novak² found 40 cases of acute hemorrhage from corpus luteum and graafian follicle. In 1930 Johnson³ brought the total number to 77, while Israel,⁷ in 1937, states that more than 300 cases had been recorded and to this list he added 10. In July, 1941, Castallo and Feo¹ recorded 28 more cases, thus bringing the total to about 338. We are reporting nine additional cases.

The etiology of *oöphorrhagia* is not definitely known. Hemorrhage resulting from injury such as sudden trauma may be responsible.⁸ Corpus luteum perforation has occurred following an abdominal blow, or during quiet sleep, or during coitus;⁹ frequently while engaged in ordinary household duties, or while walking, swimming or dancing.⁵ Inflammatory ovarian congestion, excessive menstrual hyperemia,¹⁰ chronic oöphoritis⁷ and bimanual pelvic examination^{10 11 12} are other causative factors. Corpus-luteum cysts are attributed to the same causes as are follicle cysts. According to old ideas they are the result of the chronic pelvic inflammation caused by gonorrhea, puerperal sepsis or appendicitis, or of metastatic infection from acute constitutional diseases, as influenza, scarlet fever and so on. More recently there has been a tendency to correlate them with exaggerated follicle ripening. One author (Vogt) regards follicle cyst formation as a kind of constitutional disease in which the follicles are peculiarly sensitive to incretory dysfunction.⁶ Castallo and Feo state that the possibility of an endocrine imbalance seems more acceptable. Ovulation, with the nicely adjusted phases of folliculization, egg expulsion and formation of the corpus luteum, is possible only when a balance of the involved hormones exists. An imbalance of this intricate and delicate mechanism may cause abnormal functioning, such as *oöphorrhagia*. Yet we have been unable to find a report of this having occurred more than once in the same individual.

A characteristic relationship exists between the time of ovarian rupture and the menstrual cycle. Follicular rupture occurs at the middle, corpus luteum rupture during the last half, of the cycle. In our series of nine cases, three were at the mid-interval, five during the premenstruum, one seven

*Read before the Haywood County Medical Society and the Haywood County Hospital Staff on August 21st, 1941.

days after the menses. Two of our patients awakened in the night with severe abdominal pain; one was working in a paper plant when she became ill and fainted; another in a rayon plant and was forced to leave immediately, and the remaining five were up and going about the house.

TABLE I

	Color	Age	S or M	Relation to menses
1—Feb., 1938	w	20	.... m	7 days post menses
2—April, 1939	w	25	s	15 days post menses
3—March, 1940	w	25	s	7 days premenes
4—May, 1940	w	14	s	7 days premenes
5—Jan., 1941	w	17	s	14 days post menses
6—April, 1941	w	28	.... m	Period due
7—May, 1941	w	24	.... m	7 days premenes
8—June, 1941	w	18	.... s	Period due
9—July, 1941	w	22	s	15 days post menses

It is interesting to find that one case developed in 1938, one in 1939, two in 1940 and five in 1941, hence our enthusiastic interest in this condition. Each month from January through July oophorrhagia occurred, but we had no case during either of the last five months of the year. Six cases were in single girls but one of these had given birth to a child. The remaining three were married, one nulliparous, others had borne one child each. All were white, the youngest 14, the oldest 28, average age 21.

A short review is given of each case in the order of their occurrence.

Case Reports

Case 1.—A white married woman, aged 20, was admitted on Feb. 2nd, 1938, with chief complaint of sharp pain in the left lower quadrant, which began 48 hours previously. No nausea or vomiting. Periods irregular for one year. Last period was seven days ago. No pregnancies.

Physical examination was negative except the abdomen showed tenderness with some rigidity over left lower quadrant. Vaginal examination revealed a large tender mass in the posterior cul-de-sac. There were 4,250,000 red cells, hgbn. was 81%, white cells 10,450, b. p. 120/90, urine negative.

A preoperative diagnosis was made of retroverted uterus and left cystic ovary. At laparotomy under ether anesthetic three ounces of blood with several small clots were found in the posterior cul de sac. The bleeding was traced to a perforation in the left ovary. A left oophorectomy, suspension of uterus and appendectomy were done, closure without drainage. The patient made an uneventful recovery and was discharged from the hospital on her 15th postoperative day.

Dr. Alfred Blumberg of Asheville gave the following pathological report: The ovary measures $4 \times 3 \times \frac{1}{2}$ cm. Externally it is pale, and somewhat bluish on one end. On cross section the bluish area is excavated and contains crumbling blood-tinted material which has replaced the ovarian parenchyma. The surrounding parenchyma is pigmented. The rest of the ovary contains many small cysts. The appendix measures 5 cm. \times 6 mm. Its distal portion is somewhat swollen and veins are distended.

Microscopic examination of ovary shows distended, thin-walled blood vessels, deposit of blood pigment in the parenchyma and follicle cysts. The serosa of appendix is infiltrated by round cells. Many pmn. leucocytes are found

in the region. Diagnosis: Hemorrhagic cyst in ovary showing degeneration. Appendicitis secondary.

Case 2.—A white single woman, aged 25, entered on April 7th, 1939, vomiting, prostrated and complaining of severe sharp pain in the right lower quadrant and diarrhea. She had been entirely well and was working in a paper plant until three hours before admission. She had fainted twice. The menstrual periods had been regular and the last one was two weeks previous.

The abdomen was slightly distended, tender and rigid over the right lower quadrant. The blood pressure was 70/50. Because of generalized tenderness no masses could be felt. To our regret a vaginal examination was not done. Temperature was 96, pulse 74, respiration 20. The reds were 2,540,000, hgbn. 56%, whites 14,450—75% segs., 9 stab and 16 small lymphs. The urine was negative.

A preoperative diagnosis of acute appendicitis was made. At laparotomy under general anesthetic as the peritoneal cavity was opened a stream of blood spouted as high as 36 inches above the patient, and 1500 c.c. of fresh blood was found in the peritoneal cavity. The bleeding was traced to a ruptured right ovary. The blood was bright red, only a few clots were present. The ovary was bleeding freely. The abdominal cavity contained more blood and the ovary was bleeding more freely than in any case of ectopic pregnancy than either of us has seen. It was necessary to remove the right tube with the right ovary and the appendix was removed incidentally.

Dr. C. C. Carpenter, of the Bowman Gray Medical School, gave this description of the specimen:

The ovary measures $5 \times 3 \times 4 \frac{1}{2}$ cm., is dark brown and wrinkled. On section the normal ovarian tissue is found to have been replaced by a dark brown tissue which appears to be hemorrhagic. Near the periphery several smooth-walled follicle cysts are seen. The ovary shows the follicle cyst that contains the blood clot. Fallopian tube-appendix.

Case 3.—A white single woman, aged 25, was admitted to the Haywood County Hospital on March 17th, 1940, because of acute pain in the right lower abdomen. She was nauseated and vomiting. Her illness began 24 hours previously. She gave history of dysmenorrhea. Last period 3 weeks ago.

The abdomen was tender and rigid over its entire lower extent, greatest over the right lower quadrant. On vaginal examination a mass could be felt in the right cul de sac. Temperature 99, pulse 95, respiration 20, red cells 3,550,000, hgbn. 75%, whites 8,400, b. p. 115/89.

A preoperative diagnosis of acute appendicitis and right-side tuboovarian disease was made. At laparotomy under a general anesthetic the pelvis was found to contain six ounces of dark blood with several clots and the bleeding was traced to a perforation in the right ovary. The right ovary and tube and the appendix were removed and the abdomen closed without drainage. Recovery was uneventful and the patient discharged on her 13th postoperative day.

Dr. Robert P. Morehead, of the Bowman Gray Medical School, gave the following pathological report:

Sections through the ovary show a portion of the wall of a hemorrhagic corpus-luteum cyst. Several cysts of the follicular type are present. There is no evidence of an inflammatory reaction in the mucosa of the tube, but the vessels are dilated and contain numerous neutrophils. The wall of the appendix is fibrosed and contains mononuclear cells and eosinophils. The vessels are prominent. The serosa appears to be thickened.

Diagnosis: Hemorrhagic corpus-luteum cyst of ovary. Follicle cyst of ovary. Mild acute salpingitis. Healing appendicitis.

Case 4.—A white girl, aged 14, was admitted on May 30th, 1940, complaining of persistent pain in the left lower quadrant for two days. One of us examined her abdomen the day the pain began. No vaginal examination was made. The patient was sent home as not very ill. We had removed her appendix three years ago. Her temperature was 98, pulse 80, respiration 20, white cells 8,900, reds 4,200,000, hgbn. 85%, b. p. 110/85, urine negative.

The abdomen was distended, tender over the left lower quadrant. Vaginal examination revealed a tender mass in the left cul de sac.

A preoperative diagnosis of left tuboövarian disease or ruptured ectopic pregnancy was made. The abdomen was found to contain 400 c.c. of dark blood, a few clots in the pelvis. The origin of the bleeding was traced to a rupture in the left ovary. The rupture was repaired with mattress and interrupted sutures, the abdomen closed without drainage. Uneventful recovery, discharge on the 15th postoperative day. We did not obtain a specimen.

Case 5.—A single white girl, aged 17, was admitted on Jan. 27th, 1941, with acute pain in right lower quadrant and vomiting. The onset of illness began 16 hours before. She was 100 miles away from home when the attack began and a physician there advised an immediate appendectomy, but she chose to come on home. She had no symptoms referable to the urinary tract.

The abdomen was slightly distended, some rigidity over lower part, greatest tenderness over right lower quadrant. Blood pressure 100/70, temp. 99.6, pulse 120, respiration 25, red cells 4,050,000, hgbn. 80%, whites 16,250—segs. 65, stabs 12, juvs. 3, small lymphs 20—coagulation time 5 minutes, urine negative.

A preoperative diagnosis of acute appendicitis was made. At laparotomy under general anesthetic 800 c.c. of dark fluid blood and several large clots were found in the peritoneal cavity and the origin of the bleeding was traced to a rupture in the left ovary, which was behind the uterus and slightly to the right—entirely out of its usual location—the size of an orange and ruptured 2½ inches across. First it was thought that we were dealing with the right ovary. It was impossible to save a portion of the ovary. The left tube and ovary and the appendix were removed, the abdomen closed without drainage. Uneventful recovery followed. Unfortunately the nurses in the operating room misplaced the specimen therefore we did not have a pathological report.

Case 6.—A white married woman, aged 28, admitted on the night of April 20th, 1941, with abdominal pain, which awakened her and so severe that she was immediately brought to the hospital. Pain was the only complaint. Her period was due in two days.

There was some distention and marked tenderness and rigidity over the entire lower abdomen, tenderness in both cul-de-sacs, white cells 10,700 segs., 10 stabs, 22 small monos.; reds 3,350,000, hgbn. 60%, b. p. 118/90; urine was negative.

A preoperative diagnosis of either acute appendicitis, ruptured ovary, or ectopic pregnancy was made. At laparotomy under spinal anesthetic 700 c.c. of fresh blood was found in the peritoneal cavity and the bleeding was again traced to the left ovary, which was immediately removed. On account of the large dilated tubes and their numerous adhesions in both cul de sacs, a bilateral salpingectomy was done followed by an appendectomy, and closure made without drainage. Uneventful recovery ensued and discharged on 10th postoperative day.

The microscopical description by Dr. Robert P. Morehead is as follows: There is a hemorrhagic corpus-luteum cyst seen in one portion of the ovary. The tubes show thickening of the walls with low-grade chronic inflammatory process. The wall of the appendix is thickened by

fibrous tissue. Diagnosis: Hemorrhagic corpus-luteum cyst.

Case 7.—A white married woman, aged 24, was admitted on May 13th, 1941, with a chief complaint of severe pain. Chronic bilateral salpingitis and fibrosis of the appendix. In the left lower quadrant. She was perfectly well until eight hours before, when while working in a rayon plant she developed a sharp pain in the left lower quadrant. She felt like fainting and was forced to leave her work immediately. She is the mother of one child. She gives a history of having had one miscarriage. Her periods have been regular but with much dysmenorrhea. The last period was three weeks ago.

The heart and lungs were normal, blood pressure 110/90. A large midline scar was present. The abdomen was tender and rigid over the left lower quadrant. Vaginal examination showed a tender palpable mass on the left side. Temperature 97, pulse 60, respiration 20, white cells 10,650, reds 4,560,000, hgbn. 83%, coagulation time 4½ min. Urine was negative.

A preoperative diagnosis of diseased left tube and ovary was made. At laparotomy 700 c.c. of fresh blood was found in the peritoneal cavity and the bleeding was traced to a rupture of the left ovary which was bleeding freely. The ovary was beyond repair, therefore this organ and its tube were removed and the abdomen closed without drainage. The patient had an uneventful recovery and was discharged on her 12th postoperative day.

The pathological report by Dr. Robert P. Morehead of the Bowman Gray Medical School:

There is a hemorrhagic corpus-luteum cyst of ovary and numerous follicle cysts. The tube is without evident lesion.

Diagnosis: Hemorrhagic corpus-luteum cyst and follicle cyst of ovary. Uterine tube.

Case 8.—A white single girl aged 18, mentality 10 years, who had given birth to a monster 4 months previous was admitted to the Haywood County Hospital on June 17th, 1941, because of pain in the lower abdomen from one month following the delivery. No rigidity or distention was present. For the last three days she complained of sharp pain in the left lower quadrant and we did a vaginal examination each time and kept putting her off until the admission day. She had menstruated only once since delivery and was now due.

There was tenderness over both lower quadrants, blood pressure 120/50, tenderness in both cul-de-sacs. The white cells were 11,250, reds 4,300,000, hgbn. 88%, temperature 99, pulse 95, respiration 20.

A preoperative diagnosis of bilateral chronic salpingitis was made. At laparotomy two ounces of dark blood with a few small clots was found in the posterior cul-de-sac and the origin of the blood was traced from the left ovary. Bilateral salpingectomy and left oöphorectomy were done, followed by an incidental appendectomy. Abdomen was closed without drainage. Uneventful recovery ensued and discharge on 11th postoperative day.

Dr. Robert P. Morehead gave the following pathological diagnosis: Corpus-luteum cysts of ovary. Follicle cysts of ovary. Chronic bilateral salpingitis. Fibrosis of appendix.

Case 9.—A white single girl, aged 22, was admitted to the Haywood County Hospital on July 5th, 1941, with chief complaint of severe pain in right lower quadrant. One of us (RHO) had performed an appendectomy on her five years previous, therefore we suspected that we were dealing with some pelvic involvement. The pain began three days before admission and had gradually become worse. There was nausea but no vomiting. Her temperature was 98, respiration 18, pulse 80, b. p. 120/90, red cells 3,650,000 with hgbn. 70%; whites 10,250—66 segs., 10 stabs, 2 eosin., 22 small monos. The urine was negative. Last period two weeks ago.

Physical examination was negative except for tenderness with rigidity over the right lower quadrant. Vaginal examination revealed a palpable tender mass in the right cul-de-sac.

A preoperative diagnosis of right tuboövarian disease was made. At laparotomy eight ounces of clotted blood was found in the right side of pelvis with the right tube and ovary engulfed. The bleeding was traced to a perforation in the right ovary. The blood was evacuated from the cavity of the ruptured ovary and the organ repaired with several mattress and interrupted sutures of 00 plain catgut. The right tube was swollen and covered with what appeared to be exudative material, hence a right salpingectomy was done. The abdomen was closed without drainage. Uneventful recovery ensued with discharge from the hospital on the 10th postoperative day.

Pathological report by Dr. Robert P. Morehead:

There is an early acute inflammatory reaction limited to the serosa of the tube.

Diagnosis: Early acute perisalpingitis probably secondary to hemorrhage from the ovary on that side.

SUMMARY

Nine cases of oöphorrhagia have been reported. Four of these women we believe would have died if immediate surgery had not been undertaken. The left ovary was ruptured in six cases, the right in three.

TABLE II

Ovary Involved and Type	No. Cases
Left	6
Right	3
Corpus-luteum	4
Graafian follicle	2
No specimen	3

A preoperative diagnosis of acute appendicitis was made in three cases. In one case we made a diagnosis of either acute appendicitis, ruptured ovary or ectopic pregnancy. One case was diagnosed as either acute appendicitis or right tuboövarian disease, another as bilateral salpingitis. While on another case a diagnosis of left cystic ovary and retroverted uterus was made. Unilateral tuboövarian disease was diagnosed in two cases, left tuboövarian disease with possibly ectopic pregnancy on the remaining case.

TABLE III

Preoperative Diagnosis	No. Cases
Acute appendicitis	3
Acute appendicitis, ruptured ovary or ectopic pregnancy	1
Bilateral salpingitis	1
Left cystic ovary and retroverted uterus	1
Unilateral tube and ovarian disease	2
Left tuboövarian disease with possible ectopic pregnancy	1

All patients were young, strong and healthy. No death occurred. The second case was the only one in which drainage was used. The average stay in the hospital was 13 days. No wound or pulmonary complication developed.

Associated pathologic conditions were found in four cases—two of chronic salpingitis, one of acute salpingitis and one of secondary appendicitis.

TABLE IV

Signs and Symptoms	No. Cases
Nausea	2
Vomiting	4
Distention	4
Tenderness	7
Rigidity	7
Palpable mass in cul-de-sac	5

Four cases showed some abdominal distention; tenderness and rigidity over the abdomen was present in seven cases. Four patients vomited two or more times, while only two were nauseated. On vaginal examination five showed a palpable mass in the cul-de-sac.

CONCLUSIONS

1. The clinical term, *oöphorrhagia*, suggested by Castallo and Feo is endorsed.
2. Nine cases are presented with signs, symptoms and physical examination in each case.
3. Oöphorrhagia is mentioned as a possible preoperative diagnosis in only one case.
4. Emergency operation was necessary for four cases.
5. Laparotomy was performed without hesitancy in all cases.
6. It was necessary to do radical ovarian surgery in seven cases—70.7 per cent.
7. An associated disease process was present in four cases—44 per cent.
8. No postoperative complication developed in any case in the series.
9. The average hospitalization period was 13 days.

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SPIDER BITE

(Z. B. Noon & W. L. Minear, in *Southwestern Med.*, June)

It is possible that by giving double the usual dose of the antivenin in the severe cases and when time is a factor (a long period having elapsed after the bite) even prompt relief would result.

Untreated or symptomatically treated cases of the black widow spider bite usually have a long period of morbidity and a possible mortality.

Treatment with specific antivenin (*Latrodectus mactans*) results in minimal morbidity and no mortality. The earlier the antivenin is given the more prompt is the relief.

CORONARY THROMBOSIS.—A case, verified by autopsy, is reported (*Jour. A. M. A.*) in a man of 21 years.

Stress and Disease

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STRESS is described as hardship, adversity, affliction, overpowering pressure of some adverse force or influence, strained exertion, strain of a load or weight.

Deprivations, strains, and dissatisfactions have physiologic effects—depletion of body substance, fatigue, and emotional tension (Robinson). The purposes of this article are to show (1) the effect of voluntary stress on organic disease; (2) possible errors in diagnosis made while the patient is under stress, and (3) the relation of stress to preclinical medicine and gerontology. Severe stress reactions brought on by marital unhappiness, accidents, and death, resulting in psychoneurosis, are not taken up.

EFFECT OF VOLUNTARY STRESS ON ORGANIC DISEASE

The causes of stress may be external or internal. Persons who are "caught in the trap of life" are not necessarily constitutionally inadequate nor are they necessarily emotionally unbalanced. A well-balanced prize-fighter may stand punishment for 15 rounds and then be defeated by staggering blows. Anyone may reach the limit of endurance. Then too, pin-pricks frequently repeated do more damage than hard blows. To be sure, lack of independence, security and affection often are in the background but many persons are caught in the trap who do not fall into this class. With some people family life on a farm or in a city apartment becomes so complex that they become entangled in a web from which there is no apparent escape.

Few persons are willing to recognize the ageing process. A man aged fifty attempts to do the things he did when twenty. As a result of voluntary stress and strain the patient may make an organic lesion out of one which could be functional. Many of these persons do not suffer from adverse social conditions; apparently they have everything to make them happy. In spite of this they become involved with minor compulsions and obsessions. Fixed ideas are evident in a thousand and one details of their daily routine. It should not be forgotten that fixed ideas occur in the normal mind.

The working man has his mortgages, notes at high rates of interest, high-premium insurance, difficulties with automobiles, illness, surgical operations and accidents. The laborer is never certain of his job and he lives in fear of an illness which will incapacitate him. High-pressure sales methods make a person accumulate a multitude of gadgets

and contraptions which require a great deal of care and money to keep going.

Those better situated financially have their social problems. Fear of economic disaster, increased taxation, servant problems, social engagements made ahead much as a dentist's appointments, are causes of stress. With all these problems the well-to-do often find just as much drudgery and insecurity as the truck driver who has a large family to support. Moreover, wealthier persons usually have less fortunate relatives to support.

It seems strange that one should allow himself to be upset over trivial things when millions of persons in Europe are homeless and without adequate nourishment. It is unfortunate that people go through life with a multitude of petty annoyances and make no attempt to correct them. Such weakness can be overcome at times when the physician encourages the patient to utilize some of the strength he has hidden within himself.

Everyone is apt to find himself fixed within his own home. He makes himself a prisoner in the house he built to make him happy. Whatever the disease, it may be aggravated by stress. Thus persons with cardiovascular disease, diabetes, asthma, syphilis, digestive system disease, or psychoneurosis may suffer more from stress than from disease itself. Stress before surgical intervention may lead to serious consequences.

The following case reports showing the relation of stress to organic disease are taken from the records of a private establishment under the direct supervision of a resident physician where there are rooms to take care of patients under observation. The locality is quiet and the patient is literally "blacked out" from the outside world for a few days, under the immediate care of an attendant who is cheerful, calm, quiet, and sympathetic. The patient is seen several times a day and is reassured.

A matron, aged 52, complained of swollen and painful ankles and cough. She spoke of a "tired heart." She had rheumatic fever 20 years ago and one brother died from this disease. For several weeks she had been doing too much work, which was not required of her. She also did some outside work for an aged lady who lived on the estate of which her husband had charge.

She went to a quiet place to "get away from everything." She worried about being crippled. For some time she had been tired and had no appetite for the food which she had prepared. The relief was almost immediate, once her body and mind were at ease.

The blood picture during her stay was as follows:

	1st day	2nd day	3rd day	4th day
Hemoglobin: *	10.63 Gm.	11.37 Gm.	13.18 Gm.	13.24 Gm.
Red blood cells:	3.4	3.6	4.2	4.0
Color index:	1.0	1.01	1.0	1.06

*based on 15.6 Gm. as 100 per cent.

There was no cardiac murmur suggesting rheumatic heart disease. Electrocardiogram showed some myocardial damage.

Edema of the ankles and cough disappeared on the second day of her stay. When she arrived she appeared ten years older than her age, but on the fourth day of treatment she seemed even younger than her age. On discharge she was told to avoid any extra work, any strain on the heart, to rest in bed each afternoon, and to take a rounded diet.

A matron, aged 68, had had rheumatic heart disease during childhood but no symptoms of cardiac decompensation until February, 1940. Since then she had severe dyspnea and edema of the extremities. For several months she had been busy in her new house. She was a perfectionist who overlooked no details and when she came for consultation she was worn out. Everything disturbed her. She remained in this establishment for a week and with complete rest the edema disappeared after three days and she was able to lie flat in bed without distress. When she arrived the basal metabolism rate was plus 26 per cent, but it had dropped to plus 12 per cent when she left. She was sent to a general hospital since she carried hospital insurance. The noise and confusion present in any general hospital disturbed her sleep, and in a few days she was under the same stress which she had been under in the beginning. When she finally returned to her home for prolonged bed rest her mind was not at ease and she did not do well. Undoubtedly a complete rest of mind and body for six months might improve her condition, but these basic conditions are difficult to find in a complex world.

Since many nervous conditions come from the continual application to the same thing each day without respite, there should be a break in routine. The break may come with a vacation; on the other hand, the average person gets into more complexities while motoring long distances or traveling by sea than he does in his own house. He merely substitutes one form of activity for another.

One of the chief dangers of stress is the loss of appetite with resulting nutritional deficiency. Persons with a troubled mind do not eat as they would normally. It is surprising how quickly some of these persons return to normal after a few days' rest and a normal diet. Others take months to repair the damage from a defective diet.

ERRORS IN DIAGNOSIS WHILE THE PATIENT IS UNDER STRESS

When a patient has a basal metabolism estimation he is assumed to be in a basal state. He goes to a hospital and "rests" for a half hour amid the noise and confusion of an institution. Frequently only a single estimation is made and the diagnosis is dependent on this single test. When the patient has a thorough examination in a physician's office a diagnosis is often made in a single visit. Many times this suffices but when the patient is confused or has been under stress for some time, the various

tests are not as accurate as they might be and the patient sometimes goes on a regimen which is unnecessary, perhaps expensive, with loss of time. In some instances these tests will show normal results after three or four days' rest under proper conditions where stress has been relieved. Thus the patient who had an increased metabolic rate, hyperglycemia, anemia, or arterial hypertension may not an apparent blood picture of pernicious anemia, need medication but a relief from stress. Even with the patient may be normal after stress has been removed.

It is even more necessary to see how the patient acts under stress. If the first examination of the patient is made at rest it is possible to overlook some abnormality during stress. In one instance the blood pressure was not taken upon the patient's arrival, but it was found to be normal after the patient had had a night's rest. When she returned to the physician who had referred her, he found the systolic blood pressure was 180 mm. mercury, while my report showed a normal pressure.

A matron, aged 52, had severe neuritis in both arms. Pain was severe and she had not slept for several nights—she had been walking outdoors in the middle of the night because of pain. She worked long hours in her home for her family of four and had been knitting at night. She was not obliged to strain herself with such work, since she could afford to have someone else do her housework.

On the first day this patient's basal metabolic rate was plus 68 per cent; on the second day, plus 30 per cent; plus 28 per cent on the third day; on the fifth day it was normal. On the first day the color index was 0.87; on the second, 0.98; on the third day 1.13, and 1.06 on the fourth day. After the second day with rest alone and with relief of stress she had no more pain in the arms and no sedatives were given. In this instance, rest was sufficient to relieve the suffering; the patient went to her home and the pain recurred at times as soon as she worked. This is given to show variations in the basal metabolic rate and blood picture on different days, which might lead to serious errors in diagnosis.

A physician's opinion which is made before he has had the opportunity to evaluate and study various diagnostic procedures is not of much value. The patient as a whole must be considered. Facts must be weighed and probabilities balanced and the physician must take time to eradicate his prejudices.

RELATION OF STRESS TO PRECLINICAL MEDICINE AND GERONTOLOGY

Preclinical medicine makes possible the prevention of disease by study of disease soils and conditioning periods. It goes beyond preventive medicine as commonly practiced, since it is an attempt to detect disease tendencies and to see the patient before he reaches the symptom stage. Preclinical medicine is the natural approach to the prevention of premature ageing. This study is connected with gerontology (problems of ageing) and geriatrics

(diseases of senescence). It is a study of the patient's hereditary background, constitutional type, racial factors, intellectual equipment, reaction to climate, occupation, and past diseases.

Stress is one of the more important factors affecting metabolism. Loss of appetite and loss of sleep disturb the entire system. The resulting nutritional deficiency may condition the patient for disease.

Because of continued stress the weakest part of the body shows the result of strain. Influenced by hereditary tendencies the following conditions may result from, or be aggravated by, stress: hypermetabolism, hyperglycemia, arterial hypertension, peptic ulcer, autonomic nervous system imbalance, endocrine disturbance, cardiovascular disease, and anemia. Frequently persons with a hereditary tendency to diabetes have hyperglycemia which is corrected when the metabolic load is lightened, when stress is relieved after a few days' rest. It is not uncommon to find a person with systolic blood pressure of 180 mm. mercury whose pressure drops to 130 mm. after two days' rest under proper conditions. A woman of 60 had worried a great deal about controversies caused by the settlement of her mother's estate. When she came for observation she was in a tense state and the systolic blood pressure was 178 mm. mercury. Her blood pressure was normal after two days. A man of 55 had been overworking for several months and had only a few hours' rest at night. Diastolic blood pressure was 108 mm. mercury, systolic pressure 130 mm. The urine showed low specific gravity and casts in the sediment. With less work and two days of partial rest and an additional hour's sleep each night the abnormalities disappeared in the course of a month.

When there is weakness of one part of the body because of defective genes, stress is one of the factors which aggravate the condition. Moreover, if stress is continued over a long period, permanent damage may result. The important thing is to discover these weak points before the damage becomes permanent. In some instances the damage might be repaired in a short time; in others one or two years or even longer are necessary. The advantage of observation of the patient under close supervision is that the proper regimen can be outlined during the interviews. These may be repeated until the patient comes at intervals for a check-up to ascertain if the condition is under control.

By such a plan some diseases may be prevented. There is no reason why this treatment should cause any apprehension if the clinician considers the personal equation. He must be careful to make patients health-conscious rather than disease-conscious. Some of these people are disease-conscious

when they come to the physician and the cure rests in dispelling their fears.

Patients are eager for any information which will prevent illness. Observation in quiet surroundings allows time for effective instruction in social adjustment and hygiene. The patient can unload his mind of all his troubles during frequent interviews with the physician. This "mental catharsis" in itself plays an important part in the adjustment of the patient. Robinson pointed out that the patient should be taught to take a rational rather than an emotional attitude toward his adverse social conditions. Reassurance is one of the chief weapons for the attack on disease but this can only be given after a complete physical examination. Even three or four days' observation under treatment and a frank discussion of the patient's problem may relieve permanently the worries, anxieties, and other emotional disturbances. The patient may then take an entirely different attitude toward life.

Most of these disturbances are not deeply rooted, and a superficial study of the adverse conditions with guidance and encouragement will suffice to effect a cure.

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BURBOT LIVER OIL IN THE TREATMENT OF VARIOUS DERMATOSES

(J. F. Wilson, Philadelphia, in *Minn. Med.*, June)

Ointment containing 80 per cent of burbot liver oil was used in the treatment of varicose ulcers, ecthyma vulgaris, indolent ulcers following surgical procedures and psoriasis.

All varicose ulcer patients improved while using the ointment. Some suffered dermatitis at the border of the ulcer where the ointment came in contact with the skin. This quickly healed when the application was limited to the ulcerated area.

Seven patients with severe ecthyma of the lower extremities were treated. All of these ulcers healed rapidly. Three ulcers following surgical procedures had been slow in healing. Following the application of the ointment improvement was rapid and they healed quickly.

OUR GREATEST HOPE of stemming the flooding tide of chronic mental disease lies in prompt, intensive treatment of patients with acute, recoverable disorders, in an environment which does not bear the stigma of a mental hospital.—U. S. P. H. Reports.

HEMORRHAGE from the stomach and duodenum is due to peptic ulcer in 70% of all cases.—*Battle Malone*.

RHEUMATIC HEART DISEASE is not a complication, or a sequel of rheumatic fever; it is a part of it.

Vaginal Hysterectomy in the Management of Uterine Prolapse*

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THE DEVELOPMENT of the special therapeutic aids endocrine therapy, chemotherapy, physiotherapy and x-rays has altered the operative approach to certain gynecologic ailments. By no means has surgery been minimized. It has only been subordinated to maintenance of the female in anatomic and physiologic normality. The additions to this armamentarium have been so stupendous as to give the doctor who has a first-class acquaintance with these measures and agents a far better control over the ailments peculiar to women. With this orderly progress has come a broader concept of the problem of operative procedures and of the individuals subjected to surgery. This has manifested itself especially in the selection and preparation of the patient, the choice of the anesthetic, the type of operation, the post-operative care and the scrupulous follow-up. All these details are important; but naturally the focal point is the operation, and this newer approach to details and perfection of technique has in turn brought about wider application of operative procedures. Nowhere has healthy, intelligent controversy been more beneficial than in considering the problem of the woman with prolapse of the uterus.

At Duke Hospital during the last 10 years the operation of vaginal hysterectomy has been performed on 136 patients with varying degrees of prolapsed uteri as a complication warranting operation. W. L. Thomas is at present evaluating this material and a complete report will soon be forthcoming. It is probably worthy of note that more than half of the operations were performed by the house staff. Of the one death, which gave a mortality figure of .73 per cent, the cause was peritonitis. This was in a negress who had pelvic infection, which was overlooked before operation, but which should have been suspected. The peritoneum and vagina were sutured tight at the time of operation. One patient had profuse secondary bleeding 24 days postoperative and required repeated hospitalization over a period of months. This also was a negress who had pelvic infection and the initial episode was precipitated by coitus. In this series there were only 5 colored patients, yet our gynecologic service is about equally divided. This discrepancy is probably due to two factors; the high incidence of pelvic infection, which com-

plicates this type of procedure, and the oft-quoted observation that in this locality we do not find marked relaxation of the vagina so often in the colored clinic patients. In one white private patient the left ureter was damaged with resulting temporary uretero-vaginal fistula, which closed after repeated ureteral catheterizations. To date our follow-up is only 70 per cent reliable and our percentage of cures is between 65 and 70. Most of our patients come from a radius of 25 to 200 miles which makes the follow-up difficult. Our morbidity figure is approximately 20 per cent.

A Meyer¹ lays down 5 points in treating prolapse of the uterus. 1. Correction of the weakness of the bladder sphincter. 2. Treatment of cystocele. 3. Suture of the levator ani muscles. 4. Handling of retroversion of the uterus. 5. Treatment of the symptoms of bleeding of the uterus and danger of development of subsequent uterine disease.

E. H. Richardson² clearly shows the anatomic requirements that must be met before any repair operation can be of permanent benefit.

A. H. Curtis³ and his group and Lilian K. P. Farrar⁴ review the pertinent literature on the anatomy of the pelvis and add many valuable observations. These works, together with their references and the contributions of many others, constitute a comprehensive basis for the approach of the problem of prolapse.

The illuminating work of Mengert⁵ proves the importance of the broad ligaments and paravaginal tissue in maintaining the position and station of the uterus.

Heaney⁶ outlines his technique and gives his incidence of morbidity and mortality. It is his operation of choice for removal of the uterus unless the pelvis contains inflammatory masses, adhesions or an unusually large fibroid. In a later article he advocates the use of the procedure in prolapse and emphasizes the necessity of employing special care in the prevention and cure of rectocele and cystocele.

Heaney and Kennedy⁷ are probably the two strongest advocates of the operation of vaginal hysterectomy in this country. Kennedy advocates and describes in his textbook, the operation as it is done with the clamp method in the treatment of prolapse. He maintains that this method is recom-

*Group Clinical Conference, Clinical Congress of the American College of Surgeons, Chicago, October 25th, 1940.

mended because of the greater retraction and contraction of the supporting structures of the vagina and uterus incident to the procedure. By pushing up the clamps and the supporting use of gauze the bladder is elevated—an elevation necessary for the successful alleviation of the symptoms associated with prolapse. His objection to the suture method is that it will shorten the vagina and that sutures in the sustaining ligaments will prevent the retraction and contraction of these structures. He also emphasizes the time element, that by this method correction can be completed in one-fourth the time required for other methods. He claims that a moderate cystocele can be cured by this method without additional surgery.

A. Sampolinski⁸ says that one of the chief objections to the clamp method is that perineorrhaphy is not advisable at the time and one must wait at least 10 to 12 days before completing the operative program, which entails repair of the posterior vagina.

J. Chavannaz⁹ favors the use of clamps and if necessary performs a repair operation 3 to 4 months later.

M. G. Potter¹⁰ also prefers the clamp method and employs this method in about 30 per cent of patients with uterine dislocation.

L. Averett¹¹ reports 348 operations with no deaths. He adapts it to meet many indications, some of which might be considered of a minor nature, yet his figures are conclusive. A later paper increases his report to 934 with 3 deaths—0.33 per cent.

W. C. Danforth¹² reports a series of 260 vaginal hysterectomies with no deaths and gives in detail the technique employed by his group.

F. V. Emmert¹³ describes and illustrates the Gelhorn-Dickinson technic of vaginal hysterectomy for prolapse of the uterus. His motion picture of this operation is convincing.

C. H. Tyrone¹⁴ reports the results obtained for 240 patients who had vaginal hysterectomy. He was able to follow only 175, 170 of whom experienced complete relief. However, the large percentage had not shown remarkable relaxation.

Cogswell¹⁵ maintains that the morbidity figures are in favor of vaginal hysterectomy only in the procidentia cases.

Dorsett¹⁶ thinks that hysterectomy should be reserved for patients with a definitely diseased uterus.

Faure¹⁷ has advocated the operation of vaginal hysterectomy for a quarter of a century, but finds that his students do not follow his teaching. To his mind, the chief indication is infection of the

uterus. He is only a mild advocate of the procedure in pronounced prolapse. This seems a bit paradoxical in the light of the opinions of other writers.

Phaneuf¹⁸ calls attention to the necessity of taking care of hernias in the cul-de-sac of Douglas in treating any vaginal relaxation.

J. L. Baer *et al.*,¹⁹ in an analysis of 220 patients whose operations for prolapse included 116 vaginal hysterectomies, report one death—70.7 per cent successful results, 18.4 per cent partially successful, 10.8 per cent failures—conclude that “vaginal hysterectomy will be restricted to those instances of prolapse in which the pathology of the uterus itself carries the indication for hysterectomy.”

Campbell,²⁰ in a comprehensive paper, outlines the anatomy of the pelvis, the factors leading to prolapsus uteri, the selection and preoperative care of the patients, presenting illustrations of his operative approach and giving the postoperative care. Apparently at the Montreal General this is the operation of choice in treating prolapse.

In order to successfully treat prolapsus uteri one must be familiar with several methods of approach. In reading Greenhill's yearly summary one repeatedly encounters the wise admonition that the doctor individualize. Influencing factors are the amount of prolapse; associated local conditions; the general condition of the patient; adaptability of the procedure and ability to change in the event of a minor or major crisis; the operator's familiarity and success with the different operative procedures employed to correct prolapsus uteri and his desire to learn new methods. It is only natural to suppose that only the operator who is familiar with the anatomy and physiology of the pelvis and has a basic knowledge of pelvic surgery will undertake to apply vaginal hysterectomy for the relief of prolapsus.

This report is not a general discussion of the application of vaginal hysterectomy as a gynecologic operation, but is an attempt to give it its proper place in the operative treatment of prolapse, an operative method which is invaluable.

The fact that one can remove the uterus through the vagina is no reason that it should always be done.

The choice of the type of vaginal hysterectomy, we would say from our experience, matters very little. The multiplicity of types of operations probably implies that all of them are good, and emphasizes the necessity of adaptability. When one learns that Battey²¹ successfully removed the uterus by the vaginal approach in 1876, and when one reads the clear description by Mayo²² one realizes that

the sum total of useful knowledge of the operation has had little added to it. It is our practice to have the resident review Mayo's paper, together with the work of other authors quoted in this bibliography, and proceed to apply the principles they have learned to the patient under consideration. Under adequate supervision, a fair salvage of patients with prolapsed uteri has been effected without incurring an unusually high mortality incidence.

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"COMPLETE" STUDIES NOT ALWAYS INDICATED.—I am afraid that in our day of refined diagnosis it not rarely happens that the chance of effective interference in acute disease is lost while we examine the secretions and record the temperature and search the blood.—Wm. Pepper, 1899.

TRICHINOSIS IN MAN

(P. B. Beeson, in *Proc. Royal Soc. of Med.*, England, July)

Trichinosis is acquired in only one way: by eating meat which contains living larvae of the nematode, *Trichina spiralis*. During the digestion of infected meat trichina larvae are set free in the intestine, where they mature within a few days, and mate. The females burrow into the wall of the intestine and deposit their larvae there. The larvae enter blood vessels and are carried in the blood to all parts of the body. The adult females and males are gradually excreted in the feces. As the larvae grow they become too large to pass through capillaries, and are arrested in various organs. Those which lodge in voluntary muscle may become encysted and remain alive for many years. Those which are arrested in other organs stimulate an acute inflammatory reaction and are usually destroyed within a few weeks.

Illness of the host occurs only during the period of invasion by the parasite. Subsequently the host apparently suffers no adverse effect from the presence of encysted larvae in his muscles. As usually described the illness caused by trichinosis has four cardinal features: fever, orbital edema, myalgia and eosinophilia. Many other signs and symptoms may occur, depending on chance deposition of parasites in various parts of the body. Inflammatory reactions of the brain, lungs or heart may give rise to clinical signs suggestive of encephalitis, pneumonia or myocarditis. Recovery usually begins within three weeks of the time of onset of symptoms. Some stiffness and weakness may persist for months.

Among persons or animals not previously exposed to trichinosis there appears to be marked variation in natural susceptibility.

Some degree of active immunity is developed after one infestation.

Clinical diagnosis of trichinosis is often difficult, two practical methods are differential leucocyte count is fairly reliable within three months of the time of infestation; the skin test with *Trichina* antigen is a more specific method, and simpler.

MEDICAL STUDENTS COMING WITH MULTIPLE DEGREES

(F. C. Zapper, Chicago, in *Jl. Assn. Amer. Med. Col.*, July)

The number of students coming to medical college with multiple degrees is increasing steadily. In 1939, there were 163 students in this group; the accomplishment of these students does not compare favorably with the work of the class as a whole in any bracket. The reason is not apparent.

Work of the women students does not quite measure up to that of the men students.

SHAINÉ reports (*Rev. Gastroent.*) the cases of 6 patients, all of whom had had flatulence, not associated with organic abdominal disease, in which Prostigmin Bromide (15-mg. tablets) taken orally 4 i. d. relieved the distressing symptoms promptly. No untoward effect was noted except in a single instance in which abdominal discomfort required temporary suspension of the treatment. After the symptoms subsided Prostigmin therapy was resumed and alleviation of the flatulence was unattended by the original by-effect. Shainé found Prostigmin helpful in one of his cases of paroxysmal tachycardia.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M. D., *Editor*, Richmond, Va.

FATAL PLUMBIC PSYCHOTHERAPY

LIFE is filled with evidences of reversion. The wise man, as a result of his wisdom, recorded his opinion ages ago that the thing that hath been it is that which shall be. Organized medicine and government itself live in constant dread of an outbreak of a pestilential malady that has lain somewhere in latent abeyance for generations. The pendulum is fatalistically pulled upon by an unseen force to fetch it back to where it had been. Such a pull is not limited to the domain of matter. The most upright man must live in constant apprehension of the danger of slipping backward or downward in behaviour to that plane in which he once lived, ancestrally. Warfare may have some such origin. I fear me that we are innate killers.

I see on the countenance of the so-called sportsman the facial representation of the most satisfying elation as he goes forth at sunrise on the first day of the hunting season. He sets out heavily armed, and for no other purpose than to kill—and to kill the witless, unarmed, harmless members of the native wild-life that have no defense to offer except that afforded by obvious, and, therefore, dangerous flight. The sportsman's risk of injury to himself lies in his own carelessness and in that of his fellow-killer. I know of no more inept use of language than that involved in the application of the word sportsman to the armed hunter of wild-life.

The psychiatric shooting season in Virginia opened on August 23rd. In consequence of the suddenness, the unexpectedness, and the violence attending the inception of the season, the population of the Commonwealth has been lessened and the health of the citizenship has been impaired. A deputy sheriff of Augusta County is dead, the sheriff of the County is wounded, and so is Staunton's chief of police. A Negro lies dead.

The Negro, said to have been insane, shot to death the deputy sheriff, wounded the sheriff and the police officer. Such a large posse of citizens participated in shooting the insane Negro to death that it may prove to be difficult, if not impossible, to determine which citizens deserve the credit for applying such effective psychotherapy to the fleeing, insane Negro. Many patriotic deeds have been lost in the confusion of history.

Edgar Allan Poe expressed the opinion that one of the qualities of the immortal poem is brevity. The great tragedies have been quickly enacted.

Homer's Devil occupied only a summer's day in falling steadily, without a parachute, from Heaven to Hell. Pliny the Younger looked upon the obliteration of Pompeii by the wave of lava flowing from erupting Vesuvius. A splendid city was no more. Its inhabitants had been incinerated.

Charles Johnson, a thirty-six-year-old Negro, lived alone in his cabin, two or three miles from Staunton. He went to the pump of a neighbour (whose house is rented from Johnson's father) for a bucket of water. There Johnson ordered the neighbour's wife to use no more of the water from the pump, and he threatened the woman, and knocked her down. She had the occurrence reported to Johnson's father, who works in Staunton. The father of Charles Johnson swore out a lunacy warrant, and placed it in the hands of the sheriff of Augusta County—G. M. Gilkeson. He went with his deputy, F. L. Armstrong, to the Negro's cabin. But when the sheriff and his deputy started from their car across the open space to the cabin, the Negro cursed them and opened fire on them. Deputy Armstrong fell, shot through the head, dead. The sheriff, wounded, had to crawl away. Other officers came, and a crowd of several hundred citizens searched for the Negro, who had left his cabin. As the posse closed in on the Negro in a forest, he wounded the chief of police of Staunton, John M. Webb. The sheriff and the chief of police are recovering from their wounds in a hospital. The deputy sheriff, F. L. Armstrong, and the Negro, thought to be insane, Charles Johnson, are dead.

The fact that the Negro was found at his death to be armed with rifle, shotgun and revolver tends to indicate that he was living in delusional apprehension of being attacked. The approach of the officers probably fitted in perfectly with his delusion. The fact that he had in his pockets, when dead, more than \$200.00 he had made as a worker in a quarry tends to indicate that his insanity did not make it impossible for him to labour and to earn. In a protected environment he might have lived productively into peaceful old age.

Thus, in the Valley of Virginia, within three miles of Woodrow Wilson's birthplace, and within a lesser distance, perhaps, of a great State Hospital, more than a hundred years old, prompt and effective leaden therapy is applied by official apprehending officers, and probably by some of the members of what must have constituted a mob, to a Negro thought to be deranged. Over the mountain, scarcely forty miles away, stands Mr. Jefferson's University in which medicine, psychiatric and otherwise, is taught. But Woodrow Wilson's advent in 1856; the opening of the Insane Asylum in 1828; Monticello and Thomas Jefferson and the Declara-

tion of Independence and the University of Virginia were of no avail to Charles Johnson when his mind went wrong and he knocked down his neighbour's wife and she went into town and told Charles' father how his son had treated her, and the father went to the sheriff to get him to go and get his son and put him where he would be safe, and where he could not scare and threaten the neighbours.

Can any one find in the story anything but naked tragedy resulting from insanity in the Negro and from stupidity in the white man's law? Why, in God's holy name, should the law designate and compel an apprehending officer to go out heavily armed to fetch in a crazy man? Craziness is merely an unfortunate—with Charles Johnson, a fatal—form of sickness. Why should armed officials be sent out to minister to the mentally sick? Has Augusta County, Virginia, no Health Department? Has the Commonwealth of Virginia no Department of Public Health? Are there no State Hospitals within the Commonwealth in which women and men are trained to deal with the mentally sick, some of whom may be dangerously violent? I have no doubt that Dr. Brent, the modest and highly efficient Superintendent of the splendid State Hospital for Negroes at Petersburg, could have dispatched a colored attendant to Augusta County, unarmed, who could have brought back Charles Johnson quietly and without violence. Many an attendant is daily engaged in working with such a patient as Charles Johnson. But he knows his patient is irrational, he expects irrational and not rational behaviour from his patient, and he does not threaten or assault his patient because he does not behave sensibly. Of course, an attendant or nurse of doctor sometimes forgets to keep open all the psychiatric eyes all 'round the head, and occasionally some one is cracked on the head, and sometimes a nurse or a doctor is killed. But that is better than to do the killing. So long as ships and sailors go down to the sea, so long will they fail sometimes to come back again.

No words have been written in criticism of any individual. No one who knew the officer now dead, and no one who knows the sheriff and the chief of police doubts their courage, and their devotion to duty. The complaint is not man-ward. The criticism is directed against that stupidity and asininity and tradition-cursed ignorance that still associates mental abnormality with criminality. The public health organizations that do not deal fully with mental sickness in all its manifestations as a public health problem are not performing their duties. Armed apprehending officers have no more business in dealing with psychotic patients than they have in obstetrical delivery rooms.

INSURANCE MEDICINE

H. F. STARR, M.D., *Editor*, Greensboro, N. C.

THE EFFECT OF PREMATURE CONTRACTIONS ON INSURABILITY

INSURANCE opinion concerning the prognostic significance of premature contractions or extra systoles coincides closely with that of clinical medicine. Considering the frequency of the sign in apparently normal individuals there is a surprisingly small number of statistics on the mortality among insured person showing premature contractions at time of examination. However, the procedure for underwriting these cases is fairly uniform.

Premature contractions seldom shorten the span of life. Yet they indicate a disturbance of cardiac nutrition which may be insignificant or serious, temporary or permanent. It is the underlying cause of the disturbance and the associated conditions that are of prognostic significance. When they are transient, the disturbance in the cardiac muscle is temporary, and when infrequent and arising from a single focus the underlying defect is probably limited and of no great consequence. When they occur frequently or constantly there is reason to suspect greater damage. When they arise from multiple foci, which can only be determined by the electrocardiogram, the evidence is strongly suggestive of important defects. These may be permanent and progressive or only temporary. It must be borne in mind that seriously damaged hearts may show very infrequent premature contractions or none at all, and that many persons have enjoyed good health with premature contractions from childhood to old age. The prognosis therefore depends more upon the underlying and associated conditions than upon the presence of premature contractions.

When present they call for a thorough examination, bearing in mind that they are often associated with signs of myocardial disease, aortic regurgitation, mitral stenosis and infections. A history of rheumatic infection is present in a large percentage of cases. Excessive use of tobacco, full doses of digitalis, or nervous excitement may precipitate them. Digestive disturbances are common. Re-examination and a period of observation may be necessary to determine their significance. The electrocardiogram is of value in verifying the diagnosis, in determining whether there is more than one focus of origin, and in demonstrating the possible presence of other abnormalities which may be of greater significance than the premature contractions. An electrocardiogram normal in all other respects is reassuring.

To sum up the generally accepted insurance view we may say that infrequent premature contractions in young persons do not affect longevity, but they should warn us to look for causal or associated conditions which may affect the outlook. They are less apt to be associated with a serious condition in younger than in older persons. When they occur frequently, particularly after age 40, an increased mortality requiring an extra rating for life insurance is to be expected.

The following schedule indicates in a general way the extra mortality many companies provide for in rating cases showing premature contractions on examination. Individual circumstances and judgment may alter cases:

ADDITIONAL MORTALITY RATINGS DUE TO PREMATURE CONTRACTIONS**

Without Electrocardiogram:

No. per minute	Ages 15-35	Ages 36-45	Ages 46-55	Ages 56-60
1 to 4	10%	15%	35%	50%
5 to 10	15	25	50	75
Over 10	30	60	90	125

With favorable Electrocardiogram:

Under age 40—Reduce rating shown above by 50%

Age 40 and over—Reduce rating shown above by 25%.

**In this table the additional mortality rating is added to that of the average normal risk, which is 100%. Insurance at standard rates is generally issued when the expected mortality of the risk does not exceed 125%. The above table takes into consideration the presence of premature contractions only. When all factors in the case are weighed and credits are given for the favorable and debits for unfavorable factors the expected mortality for the entire risk may vary considerably from that indicated by these figures.

DERMATOLOGY

J. LAMAR CALLOWAY, M.D., *Editor*, Durham, N. C.

THE MANAGEMENT OF PYOGENIC SKIN DISEASES

UNDER this heading are included impetigo contagiosa, infectious eczematoid dermatitis, syphilis barbae, folliculitis, and other diseases of the skin in which secondary pyogenic invasion plays an important role. Frequently scabies, dermatophytosis, "eczema" and other cutaneous affections and infections which are not primarily pyogenic are so complicated by secondary pyogenic infections that unless this factor is recognized and treated the underlying dermatosis will prove extremely recalcitrant to therapy.

Pyogenic infections are markedly influenced by high-carbohydrate intake as has been demonstrated by Pillsbury and Sternberg and others. This is well illustrated in the frequency of furunculosis in patients having diabetes. Accordingly, we feel very certain that the carbohydrate intake should be

lowered drastically in all patients showing pyogenic manifestations.

In a like manner the ingestion of iodides and bromides should be restricted, since these frequently make pyogenic conditions worse. Iodide, even in the form of iodized table salt should be restricted as well as all medications containing iodides and bromides if at all feasible.

Locally warm wet compresses such as normal saline, 1:4000 KMNO₄ solution, or boric acid solution should be used, changing the compresses every two hours during the day and every four hours at night. Mechanical debridement should be done in which crusts are lifted off, and vesicles, bullae and pustules evacuated by clipping off the top of the lesions.

Chemotherapy should be used depending to some extent on the type of organism found. It has been shown that in staphylococcal infections 2 per cent gentian violet solution is one of the most effective remedies, while in streptococcal infections 3 to 5 per cent ammoniated mercury gives best results. Recently the use of the various sulfonamids, particularly 5 per cent sulfathiazol ointment, has been invaluable in the management of pyogenic conditions. It has been shown by Pillsbury and others that sulfathiazol ointment works best in an emulsion-type base rather than in the usual greasy ointment bases. Occasionally, patients are found sensitive to this preparation but no more frequently than when administered by mouth.

Chemotherapy using the sulfonamids, particularly sulfathiazol and more recently sulfadiazine, is sometimes necessary when local measures fail. The same precautions, such as daily blood counts, daily urinalyses, and observations for other toxic manifestations, govern the use of the sulfonamids when used for cutaneous eruptions as when used for systemic infections.

Ultraviolet light irradiation generalized in the form of sunbaths or artificial ultraviolet light as a tonic oftentimes gives the pull necessary for complete eradication of the infection. X-ray therapy in selected cases administered by a physician especially trained in its use for dermatological conditions is beneficial. In a like manner, the use of staphylococcus toxoid, autogenous vaccine, colloidal manganese, tin and other adjuncts may be necessary when the regimen outlined has failed; and it is usually advisable to seek aid by a consultation with a physician trained in dermatological therapy.

DOUBTFUL or positive syphilis reactions were found by Lynch, of St. Paul, in 16% of 263 persons studied after primary vaccination. Such reactions may be strongly positive and therefore a source of confusion to the clinician for several months after vaccination.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

EMERGENCY ABDOMINAL CONDITIONS AMONG INFANTS AND CHILDREN

ABDOMINAL emergencies in practice among children are frequent and serious. This consideration of the subject¹ should serve to freshen our interest and information.

In the newborn infant the prompt return of food may occur after every feeding, at times with bile. In the presence of abdominal distention, particularly in the epigastrium, in the absence of stools and sometimes with visible peristalsis from left to right, congenital atresia or other pyloric or duodenal obstruction is probable. If the obstruction is complete, surgical measures must be carried out promptly.

Evidence of pain is the most common indication of acute abdominal disease in infants and children. Crying or screaming by the small infant usually is interpreted as colic. A careful history usually will reveal the infant's birth and progress normal up to two or three weeks of age; since that time the baby cried much, drew up the legs while crying, and kept the family awake. All sorts of feedings were tried. The child continued to gain in weight. The abdomen is soft, not distended, not tender, no palpable masses. The rectal temperature is normal, inguinal rings are closed, navel not bulging, and not reddened. The problem in such a case is one of convincing the family that there is nothing seriously wrong and of allowing the baby to be quiet and to develop regular habits of eating, resting and perhaps also of crying. If the supply of breast milk has not disappeared, the baby should be returned to the breast. Complementary feeding may have to be resorted to until the supply of breast milk has become adequate.

Ordinarily, pyloric stenosis or obstructing bands do not create the picture of an acute condition, yet the first indication of their presence may be sudden and there be evidence of severe pain and vomiting. Visible peristaltic waves passing from left to right are evidence of obstruction at or near the pylorus.

Colicky abdominal pain among infants of from six months to two years should give rise to the suspicion of incarcerated hernia or of intussusception. For some time after the onset of intussusception the only symptoms may be a sharp cry at intervals to an hour. Between the paroxysms the child appears to be rather comfortable. He may and frequently does fall asleep. His general condition does not appear to be bad. Later vomiting and bloody

discharges from the bowel appear. Usually, in 12 to 18 hours there is toxemia and shock. The child may become more quiet with pale, sunken eyes and fever of variable degree.

For sometime the abdomen may be held rigid during the paroxysms of pain. In the intervals the typical, sausage-shaped mass may be palpated along the ascending and transverse colon. Failure to palpate such a mass may be disregarded if the other striking features are present. A palpable mass is less likely in the cases of ileo-ileal than in the more usual ileocolic or colocolic forms.

Within the first few hours digital examination by the rectum probably will not reveal the mass. However, the examining finger on withdrawal will be coated with blood or bloody mucus, corroborative of intussusception and an indication for immediate surgical treatment. In most cases the mass presents in the rectum, but by the time this happens gangrene has occurred.

If in every instance the condition could be recognized and treated within 12 hours, the mortality rate would be low. Parents should be taught to report to the physician untoward behavior on the part of infants, and the physician should learn to regard seriously the early symptoms of these two conditions which may be so lightly dismissed.

If intussusception is ileocecal, the smaller ileum can be withdrawn from the larger colon, frequently with ease. Attention can be directed to the bowel so as to prevent recurrence. Occasionally, intussusception undergoes spontaneous regression, or this may be brought about during the administration of an anesthetic preliminary to operation. Supportive measures to combat toxemia and shock also are of importance. Transfusions of blood and the intravenous and subcutaneous administration of solution of sodium chloride and glucose are the chief supportive measures.

An infant who has not only cried lustily, but has screamed at intervals of a few minutes to an hour for a few hours or a day, who has seemed to be well up to the time of the crying, should have a careful history and examination, including abdominal. The inguinal rings may give evidence of a firm mass, palpation of which may result in increased outcry. A previous hernia makes such a diagnosis almost certainly correct. The fact that the hernia is small may give rise to the belief that the symptoms of pain, emesis and later, toxemia, are of other origin. Occasionally, the rather cystic feel of the herniated mass to the examiner's hand simulates hydrocele. Acute inguinal adenitis must be distinguished from hernia.

In the case of strangulated hernia, spontaneous reduction may take place or the hernia may reduce

¹ I. R. L. J. Kennedy Rochester, Minn., in *Jl. Kansas Med. Soc.*, Aug.

itself on the administration of an anesthetic. If the evidence is strong that strangulation was of short duration nothing further need be done. If strangulation still persists or has persisted for a considerable time before spontaneous reduction occurs, surgical exploration is demanded.

Rarely, the same type of crying is present as that of inguinal hernia, and can be accounted for by a ventral or umbilical hernia in which a portion of underlying tissue has been caught, the tension, pull or pressure of the surrounding tissue causing the pain.

Other less frequent causes of obstruction are volvulus, thrombosis of mesenteric vessels and cysts of the intestinal wall. Distention is much more likely when the site of the obstruction is high. In any case in which obstruction is suspected, it may be useful to make a roentgenogram of the abdomen.

Of all the acute abdominal conditions which may afflict infants and children, appendicitis continues to be the most frequent and the most dangerous. Infants of two years and less are likely to cry as the only evidence of pain of acute appendicitis. Emesis that does not relieve the pain is corroborative. Emesis and fever may or may not be present. The important factor is the examination. With the patient relaxed even for an instant between cryings, tenderness and muscle spasm can be elicited over McBurney's point by even the lightest touch or may be evident only on deep palpation. The appendix of children usually is higher than in adults, and frequently is retrocecal, in which case the point of maximal tenderness would be higher or less definite.

Rectal examination, which offers even greater difficulty in the young, frequently more than repays the time spent in gaining the confidence of the patient. In the presence of an acutely inflamed appendix, increased tenderness on the right side is likely to be elicited, occasionally an inflammatory mass.

The leukocyte count usually is 12,000 or more, largely of pmn. cells to 80 per cent or more. The absence of such an increase does not rule out, and the presence of leukocytosis does not establish, the diagnosis of acute appendicitis.

It is among infants and younger children in particular that delay usually takes place and it is among these patients that perforation occurs with such great frequency—in inverse ratio to the age of the patient and to the curve of incidence.

There is necessity for distinguishing between appendicitis and pneumonia. Pain in the thorax, characteristic facies with dilatation of the alae nasae, abdominal breathing and grunting respiration all serve to indicate pneumonia. Vomiting in

appendicitis is rather frequent, rare in pneumonia. Diarrhea is much more common in diseases of the respiratory tract. The severe, constant and generalized nature of abdominal pain in pneumonia differs from the paroxysmal, localized pain of appendicitis. The abdominal tenderness in pneumonia is usually marked, but it is possible to press deeply without increase of discomfort. In appendicitis the opposite is true. The rectal examination usually will elicit more tenderness on the right in cases of appendicitis. The leukocyte count in pneumonia and the temperature are higher. If the history, physical examination and leukocyte count do not remove doubt, make a roentgenogram of the thorax.

Two conditions usually impossible to distinguish from acute appendicitis are inflamed Meckel's diverticulum and acute mesenteric adenitis. It would be an error to close the abdomen after removal of a normal-appearing appendix without the making of a search for more definite signs of disease. If there is a history of intermittent melena, the presence of Meckel's diverticulum may be strongly suspected. Children who are well nourished are bountifully supplied with lymphoid tissue. To be certain that acute mesenteric adenitis is the cause of the symptoms, it is necessary to remove a lymph node and demonstrate by pathologic examination the presence of acute inflammation.

Of abdominal pain, generalized tenderness and rigidity among infants and children the most common cause is perforated appendix with spread of infection throughout the peritoneal cavity. Primary peritonitis may be present without any of the three cardinal signs of peritoneal infection. It has happened at the clinic that an infant suddenly became very ill, presented the picture of severe intoxication with ashen-gray pallor, sunken eyes, high fever and marked leukocytosis, and died within 36 hours without evident abdominal tenderness, rigidity or distention, only to have demonstrated at necropsy the fact that the cause of illness and death was acute primary peritonitis.

A distended bladder caused by acute retention of urine will explain some masses, the catheter will diagnose from other conditions.

Hydronephrosis may manifest itself in an acute manner.

Cysts of the mesentery, omentum and spleen rarely give rise to acute symptoms and although they are easily palpable after they have attained considerable size, are usually present for long periods before they are discovered.

Pelvic tumors most frequently arise from the ovaries. If pedunculated and become twisted, severe pain, abdominal tenderness, vomiting and leu-

kocytosis may follow. Although the suspicion may be entertained that such a tumor is present, the diagnosis is seldom made for children until the time of operation.

As to trauma to the abdomen the most important consideration is rupture of a viscus. Color, respiration, pulse, values of hemoglobin and erythrocytes may be helpful.

In cases in which injury has been extensive, the child probably will be in such shock as to mask some of the abdominal signs. As the obvious indications for antishock treatment are carried out, repeated careful examination of the abdomen will be of most help in elicitation of points of tenderness. Injury to each of the viscera may result in observations that are indicative of the special viscus injured.

The organ most frequently injured is the spleen, and perhaps secondly the liver.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

SURGERY IN GENERAL PRACTICE**

THE PRACTICAL INFORMATION contained in this Symposium will greatly assist any general practitioner to handle many of his surgical cases in such a way as to be satisfactory to him and to his patients. It is refreshing to see a medical writing which frankly considers cost.

I. M. V. Novak

The Cheapest Antiseptic: After extensive clinical and experimental work, the following formula was found to be as effective as any antiseptic on the market. In quantities, it can be made for 35c a gallon.

Alcohol (95%)	525.0 c.c.
Acetone	100.0
Cresol, U. S. P.	5.0
Mercuric chloride	0.7 Gm.
Eosin Y	0.6
Acid fuchsin	0.08
Water q.s. ad	1000.0 c.c.

It is quick-drying, quick-acting, is not injurious to the skin (unless the patient is allowed to lie in a puddle of it), to the operating room personnel, or to linens, and is capable of sustained action. Ordinary rubbing alcohol may be used (recomputing the formula to compensate for the weaker strength of the alcohol). It is an interesting fact that 50 to 70% alcohol will kill organisms more quickly than will the 90% strength.

*Highlights of an intensive postgraduate course given by the University of Minnesota School of Medicine, March 10-17, 1940. Published in *Clinical Medicine*, Aug.

**All of the contributors to this symposium are members of the faculty of the University of Minnesota.

Prevention of Postoperative Wound Infections: Two chief sources of operative wound infections, aside from infection introduced into the wound by operating in an infected field, are the skin and the operating room air. The number of bacteria in the air is directly dependent upon the number of persons in the room.

Ninety-eight per cent of the organisms on the skin can be removed by 10 minutes scrubbing with soap, under running water, the hands then rinsed in 70% alcohol. We have not found that the number of bacteria increases during the wearing of rubber gloves, indicating that rescrubbing is not necessary between operations or if glove is punctured during an operation.

The skin should be washed with soap and water; then acetone as a fat solvent; and, finally, three applications should be made of the antiseptic described hitherto. Time should be given for each application to dry before putting on the next coat.

Treatment of Wounds: Never use any alcoholic antiseptic in a wound! Let live tissues live! The area of skin around the wound may be cleansed well with soap and water, defatted with acetone, and painted with the mercuric-alcohol-acetone antiseptic. The wound itself is best washed out with physiologic saline solution. Irrigations of 1/2% (1:200) iodine, aqueous, do not injure subcutaneous tissues. A wound can cleanse itself of many infections. I have shown that wound healing time is *doubled* by applying an antiseptic tincture in a wound.

Inexpensive Instrument Sterilization: The use of a 2% compound cresol solution and 5% glycerin, in a mixture of equal parts of alcohol and water, for sterilization of instruments, has proved effective. All pathogenic bacteria are killed in one minute or slightly longer. This mixture is much less expensive than commercial preparations used for sterilization of knives, scissors, and other instruments. The cresol solution also prevents rusting.

II Ralph T. Knight

Morphine Intravenously: If a 1/8th or 1/6th grain dose does not stop the pain within 10 minutes, a further dose of 1/12th to 1/6th should be given slowly, until the patient experiences complete relief. This method is safe, as the exact amount is given that the patient needs. When given hypodermically, one must wait for half an hour or more before one can determine if a further dose will be needed, and then guess as to the size of the second dose. After complete relief is obtained, a small dose may be given hypodermically, if needed, to maintain the effect.

Painful examinations or operations under local anesthesia are made much more comfortable by the intravenous injection of morphine just prior to commencing the operation. Here the dose cannot be gaged by the relief of pain, so the patient must be asked if he experiences dizziness, weakness, drowsiness, warmth, numbness, tingling, neuralgic pain, or backache. When one such symptom appears, the injection is stopped. The morphine is dissolved in 2 c.c. of distilled water and injected slowly (2 min.)

The patient who has received Pentothal Sodium or Evipal intravenously must be carefully guarded for some hours afterward. Although he may appear to be normal and may be able to answer questions, his coordination is poor for several hours and he should not be allowed to walk through traffic or drive a car, but should be sent home in the care of a responsible person. Pentothal sodium is preferred, because 1) relaxation is better; 2) its action is longer; 3) there is less coughing and hiccuping; and 4) excitement is less.

Local Anesthesia: The first injection of procaine should be made between the lesion and the source of nerve supply, so that, in as short a time as possible, the further injections will be made in anesthetized tissues.

Local anesthesia, obtained by infiltration of the landmarks with a needle while injecting any solution, is being much used for gynecologic procedures. Probably, the ideal anesthetic for upper abdominal surgery is the combination of a small dose of spinal anesthetic with a light general anesthetic, or the use of pentothal sodium.

Be very slow and gentle in approaching bony landmarks with a needle while injecting procain solution. If the needle is forcibly jabbed against the bone, the point will be bent back into a hook and the tissues will be torn on its withdrawal. When infiltrating along a line the needle should be pulled out until the point is in the subcutaneous fat before it is inserted in another direction.

Vinyl Ether administered on a small gauze mask directly over the nose is a very effective obstetric anesthetic.

We routinely aspirate bronchial secretions through a bronchoscope after every thoracic and upper abdominal operation. Apparently, it markedly decreases the number of postoperative pneumonias and pulmonary atelectases.

III A. A. Zierold

Colic: Do not make a diagnosis of gallbladder dysfunction if the patient does not have definite attacks of pain. Do not carry out a gallbladder operation unless the patient has recurring colics.

The patient who has had biliary colic will be relieved by proper surgery.

The phrase, "fat intolerance," should be discarded, as these patients are often able to eat a high-fat diet. Distress after eating fatty meals is often due to the associated achlorhydria.

Bowel distress, due to cathartics or roughage, is often misdiagnosed as mild, chronic cholecystitis. "Dyspepsia" may be entirely due to a decreased amount of gastric acidity.

Acute Cholecystitis: Conservative management (local heat, complete rest in bed, analgesics and nasal suction, if needed) should be used in the treatment of acute cholecystitis. The analogy to acute appendicitis is a poor one, as only 3% of gallbladders perforate and only a few of these result fatally, thus giving a mortality rate of 1 to 1½%. A mortality rate of 3 to 6% is encountered when the acutely obstructed gallbladder is attacked surgically. Empyema of the gallbladder is a misnomer, as culture of the purulent-appearing fluid in these gallbladders reveals bacteria in less than 50%.

IV O. K. Campbell

Colonic Obstruction: This is not a surgical emergency. The bowel will have been thinned by pressure of contained gas and fecal material, and does not respond well to suturing. Contamination is almost inevitable. The mortality rate of any surgical relief of colonic obstruction is in the neighborhood of 30%.

Medical Decompression: This routine should be used, even if there is no clinical evidence of obstruction (crampy pains, obstipation):

1. A low-residue diet.
2. Large amounts of mineral oil (3 to 5 ounces of mineral oil daily, in divided doses) until leaking occurs.
3. Daily saline enemas.
4. Daily injections of 200 mg. of cevitic acid (vitamin C).
5. Intravenous injections of dextrose solution (50 c.c. of a 50% solution).

THE COBRA STRIKES AT PAIN

(P. E. Craig, Coffeyville, Kansas, in *Clin. Med.*, Aug.)

Sixty-six patients, exhibiting a wide variety of painful conditions, were treated with cobra venom, and all but one experienced relief.

Cobra venom is a powerful analgesic of relatively low toxicity, which effectually controls pain by its cumulative action on the central nervous system.

It is safe, dependable, and non-habit forming and, in my opinion, is a valuable therapeutic agent which has an ever-widening field of usefulness.

GIARDIA, an organism generally considered harmless, may turn out to be disease-producing in man.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

THE LAYMAN'S VIEWPOINT OF A CLEANSING EYE WASH AND OTHER INGREDIENTS FOR LIDS AND EYESACS

OCULISTS and others of the medical profession have the opportunity to use their efforts to educate the public against the ever-increasing viewpoint that some form of eye treatment, self-prescribed and administered, is necessary for the maintenance of the health of the eyes. This belief has been engendered by makers and dispensers of proprietary preparations for the eyes through well laid schemes of advertising, through cosmeticians and those who make their supplies, as the result of the desire of womankind in particular to resort to all and sundry measures which they think may improve the appearance of their eyes; and, finally, too often by physicians who, when advice is sought for some medication for the eyes, advise the patient to use this or that medication in the absence of any specific reason or basis for so doing and no admonition as to a specific period of time to discontinue the application of the drug.

The indiscriminate and long continued use of the various advertised eye washes, lotions, salves and cosmetics, as well as those drugs specifically necessary in the treatment of eye conditions, has a deleterious effect upon the mucous membrane of the eyes, the excretory apparatus of the lids, the skin of the lids and the eyes themselves when not prescribed for a specific purpose for a specific period and under the guidance of a physician who should know what drug or drugs are indicated and when the desired result is obtained.

The writer finds that too many physicians prescribe argyrol ad lib for any and all types of eye inflammations, for symptoms of irritation, for "tired eyes," for infants and adults with stenosis of the tear duct and just as a "cure all."

Argyrol has no direct and specific action against any organism commonly found in the eye sacs, not even the gonococcus for which it has been advocated for years. It can produce a permanent cosmetic defacement of the ocular and palpebral mucous membrane known as argyrosis. The writer has seen a half dozen such cases in the past year who gave the history of using argyrol for an indefinite period either by prescription from a physician or of their own volition. Some gave the history of using a 15 to 25 per cent solution which was a year old or older and hence the solution had become greatly concentrated.

The writer not infrequently sees a patient who uses a saturated solution of boric acid or other eye

wash several times daily and has been doing so for a protracted period. The same may be said of various eye ointments. In neither instance was there any reason for their use save the patient's viewpoint that because of the dust and smoke and what-not commonly present in urban districts the eye sacs should be washed out and more frequently than the face and hands to say nothing of the body.

A well known over-the-counter eye-drop solution to be had in practically all drug stores is used by a fairly large number of people because of its claim to strengthen the eyes and make them more brilliant. The so-called brilliancy it produces is the constricting effect of the superficial blood vessels of the mucous membrane the result of its adrenalin content. The use of adrenalin is not without danger in some eyes, especially in those of the aged, and in those with actual or potential glaucoma, because of its mydriatic effect on the pupil. Many, especially women, use all manner of dyestuffs upon their eyelashes, applied at "beauty parlors" or by the individual personally via arduous and meticulous effort for the desired cosmetic result. Some people have a sensitive reaction to them as well as to many ointments and drops commonly used. A fair number of persons seem to have presented a mild to severe inflammation of the skin of the lids, the mucous membrane of the lids and globe, to partial desquamation of the cornea, from the use of these preparations. Within the year he has had four cases presenting a severe reaction of the eyes from the use of eye cosmetics. Two of these had the cosmetic applied in a "beauty" parlor and two purchased it over the counter and applied it personally. All four cases led to litigation and a generous settlement with each individual by the maker of the product used. The moral here would seem to be to protect the product for the use of the many who are gullible and resistant to its effects as against the few who are non-resistant to its irritative action.

Oculists in particular and physicians in general should apprise their patients of the uselessness, and often danger, of the prolonged use of any eye wash, drops or salves and the use of cosmetics about the eyes and their adnexa. They should prescribe a certain drug, if at all, for a specific reason for a specified time and this under their special supervision; and at no time to prescribe any drug for use in the eye indiscriminately or as a placebo. Unless a diagnosis has been made of a disease in which a known drug is indicated, to strongly advise the patient against the use of any drug in the eye, fortifying this statement with the explanation that the tears with their lysozyme content, against the common diseases of the eye sacs, are a better eye

wash and a better protector than drugs, that the prolonged use of foreign ingredients so alters the composition of the tears as to destroy their bactericidal effect thereby making the mucous membrane of the eyes less resistant to the growth of the commoner forms of bacteria.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

MILESTONES IN N. C. PUBLIC HEALTH

PUBLIC HEALTH and PREVENTIVE MEDICINE make so large a part of the daily work of the private physician we feel safe in assuming that he will be interested in the high lights, chronologically arranged, of the development of organized Public Health in this State as set forth by Dr. G. M. Cooper, Assistant State Health Officer:

- 1877 Board created by the General Assembly. Annual appropriation, \$100.
- 1878 First educational Pamphlet issued. Subject, "Timely Aid for the Drowned and Suffocated."
- 1879 —Dr. Thomas F. Wood elected first Secretary of the Board, May 21st; Dr. S. S. Satchwell first President. Other legislative provisions: (1) Chemical examination of water, and (2) organization of county boards of health composed of all regular practicing physicians and, in addition, the mayor of the county town, the chairman of the board of county commissioners and the county surveyor. Four educational pamphlets issued. Subjects: "Disinfection, Drainage, Drinking Water and Disinfectants"; "Sanitary Engineering"; "Methods of Performing Post-mortem Examinations"; "Limitation and Prevention of Diphtheria."
- 1880 A survey of schoolhouses was carried out through the County Superintendents of Health. Most of the schoolhouses were of one-teacher size, of frame and log construction, and none of them in rural districts had any type of privy.
- 1881 General Assembly passed a law requiring regulation of vital statistics at annual tax listing; law ineffective.
- 1882 Dr. Thomas F. Wood, State Health Officer, was President of the North Carolina Medical Society and the annual Meeting was held at Concord. At this meeting the State Board of Health appointed a committee for each county of one physician to "canvass (the people) in the interest of prospective legislation" on public health matters. The

chief items of public health interest this year were the emphasis placed on the effectiveness of smallpox vaccination and increasing realization of polluted water as a source of typhoid fever.

- 1883 A meeting of all county superintendents of health was called in Raleigh early in the next session of the Legislature. One of the chief purposes of the proposed meeting was to urge the enactment of vital statistics legislation, and to procure a small appropriation for printing.
- Several epidemics of smallpox with numerous deaths were reported—one of the most severe was in Clay and Graham counties.
- 1884 Dr. Wood, Secretary and Treasurer of the State Board of Health, made a pessimistic report. He pointed out that it was impossible to inaugurate public health work to say nothing of carrying it on, without money.
- 1885 General Assembly made county boards of health more efficient; allowed printing privileges not to exceed \$250 annually. Annual appropriation, \$2,000.

These data taken from the Twenty-eighth Biennial Report N. C. State Board of Health, July, 1938—June 1940, and entitled: "The Chronological Development of Public Health Work in North Carolina."

(To be continued)

DENTISTRY

J. H. GUYON, D.D.S., *Editor*, Charlotte, N. C.

DENTAL FOCI OF INFECTION

Dental decay is the major problem of dentistry. When evidences of infection are in direct communication with the outside world, drainage is more easily established and the dangers of systemic or distant involvement are less.

The cause of a radiolucent area is usually destruction, as: 1) In caries due to actual loss of tooth substance; 2) when a root of a tooth has been removed, destroyed or resorbed; and 3) in bone with an abscess; granuloma or cyst; with sequestration in osteomyelitis; with a destructive tumor. Radiopaque areas deserve less consideration.

When successive x-ray pictures originally reveal a radiolucent area, and subsequently more and more radiopacity, with a history and symptoms and signs suggesting a dental focus, such evidence is convincing that the probability of such a lesion causing systemic manifestations is less and less.

The sedimentation test only exceptionally may indicate the activity of a dental focal infection.

Periodontoclasia (pyorrhea) represents another major problem as a probable dental focus. This

cannot be dismissed lightly. Possibilities as to the modus operandi should be mentioned: Absorption of bacteria or their products directly into the systemic circulation from pockets; an exudation of purulent or infected material into the mouth and subsequent swallowing of such infected material; lastly, interference with mastication as the result of loose teeth. While the positive proof in support of any of these contentions is difficult, appreciation of the fact that most of the lesions are open lesions at least diminishes the probability of absorption of bacteria or their products directly into the systemic circulation.

In pyorrhea, the chief pathological features are: alveolar resorption, pocket formation, loosening of the teeth with or without suppuration. Usually, calculus and evidences of infection in pockets are present.

Information as to the probable cause and length of time retention has been present will be very helpful in evaluating such a focus. Where roots have been retained for years and the x-ray is negative or possibly shows condensation in contrast to a radiolucent area, there is less probability of an active focus.

When a tooth is traumatized so severely as to completely sever its periodontal attachment with death of the pulp, this may or may not act as a focus. Usually, such injury will result in loss of the tooth within a short time. In such cases, on account of open socket and free drainage, if infection does occur the local defense will usually be adequate.

Inadequate root canal therapy, sometimes the fault of the dentist, often the neglect of the patient, may be responsible for dental foci. All pulpless teeth should not be sacrificed on the altar of focal infection.

Radicular granulomas practically are all associated with devitalized teeth, sometimes a tooth which has had root canal therapy, but more often has not. They represent infection, possibly of a latent type, and are thereby a menace.

They are present in many individuals whose health is excellent and remains so indefinitely.

An extensive list of conditions have been attributed to dental foci. The organs involved include: joints, muscles, nerves, kidney, heart, eye, gastrointestinal tract, nasopharynx and gallbladder. As to relation of dental infection to heart disease, comment will be made only on the relation of extractions to endocarditis. Several reports have been made on subacute bacterial endocarditis developing within a short time after extraction of infected teeth. At Montefiore Hospital, of 215 hospital cardiac cases of rheumatic, arteriosclerotic

and syphilitic patients, from whom a total of 1126 teeth had been extracted under local anesthesia, there was no case of subacute bacterial endocarditis.

More direct mechanisms and pathways of extension have been emphasized by several authors in affections of the antrum and eye. In striking contrast to the other parts of the body, the pathogenesis strongly indicates a direct extension or direct pressure on dental nerves rather than the usually accepted explanation of hematogenous spread.

Although the ravages of infection may be incapable of repair, the progress of infection may be arrested and the source eradicated.

HISTORIC MEDICINE

MERCURIUS' PLAGUE-TRACT

WHOEVER might be disposed to believe that the sects of our own day who claim to cure by being in direct partnership with God, and loudly disclaim their love for filthy lucre, while showing the greatest avarice in obtaining all of it they possibly can, will do well to read attentively the following abstract of an instructive article.¹

This is the vade-mecum of an itinerant and picturesque Italian charlatan of the late 15th and early 16th century, Giovanni Mercurio of Correggio. It gives a vivid, if rather terrifying, picture of a society held in subjection by superstition and belief in magic. It is well to recall that newspapers, magazines and other publications of our own day freely advertise "remedies" that, no less than those of Mercurius, ask for, and receive a total "suspension of disbelief." The tides of ignorance and superstition recede slowly.

The title, in abstract, is:

AGAINST THE PLAGUE: WHOEVER IS A THIEF AND INIQUITOUS WILL VERY RASHLY ATTEMPT TO PRINT THIS SAME WITHOUT THE AUTHOR'S PERMISSION. THE PESTILENCE WILL CONSUME HIM WITH SWIFT & VENGEFUL FURY.

This and the text's essence are reproduced as illustrating the fact that the ways of the charlatan have changed little in the centuries since Mercurius (or -o) flourished.

I, John Mercury of Correggio, following the inner, celestial, and spiritual man, one endowed, finally, (through the grace of God) with the triple (namely, earthly, celestial, and divine); I, myself, (depending on neither the boastfulness of the em-

1. W. B. McDaniel, II, Philadelphia, in *Trans. Col. of Phys. of Phila.*, June

pirics, nor the artifices of the sophists, nor for the sake of unspeakable or filthy lucre; but, rather, on the fervor of universal charity and the divine love of ones neighbor) thus openly speak with a herald's voice, and I say:

Whoever in this exalted, glorious, and most celebrated city has ears and eyes for taking heed, let him do so; and who takes heed, let him learn; and whoso desires and wishes to have a remedy and medicine straight from God, let him hasten to me quickly (from every direction) and with confidence. Quickly, and I indeed with balanced scale and liberal hand will share with him the medicine itself, in the sign and name, the word and spirit of God the Lord Jesus Christ. If a man were to give thirty silver pieces (thinking thus to have paid a fair price for it), he would be valuing it at nothing at all. Be not afraid, and be not anxious; nor let your heart be struck with terror, but rather let it be comforted, since (as we read in Holy Writ) God does not make death, nor rejoice in the destruction of the living. For (as all the wise assert) God and nature neither abound with superfluous, nor yet fail with what is needed.

Let the sick man hold fast to this thought, whoever he may be: that, when this lash from God is removed, he will escape wholly, and be completely free from, every other fatal and savage pestilence.

The cautious and pious will seek hand and foot to obtain this miraculous and incomparable medicine of ours, which preserves and guards a healthy man from all contagions of the plague-bearing virus (not only those of which I have so far made mention in this present proclamation), but which also, (by the widest projection of the divine charity hitherto, by the mystery of eternity, and by the work and sacrament of the united and individual sacrosanct Trinity), most agreeable cures, and heals, and liberates (as if by a miracle). And so, indeed, with all their hearts and with joy and gladness, they will render thanks and honor and praise and all benediction to Him, the Creator of all healing, who alone smites and heals, wounds and makes sound, who leads us to the very portals of death and bringeth us back, who is death to Death and destruction to the infernal regions.

This privilege (of distributing and dispensing the gift of the same Lord God) has, without question, been granted to us alone. Whoever is incredulous will show himself crafty and deceitful. The curse and anathema of the dread and fearful Judge himself (even as we said in the beginning) will consume him most horribly and pitilessly.

SPONTANEOUS PNEUMOTHORAX may simulate acute coronary occlusion.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE ACUTELY DISEASED APPENDIX WHICH RUPTURES IN DELIVERY

THE acutely diseased appendix may present mechanical and physical difficulties to delivery which may make operative removal without rupture impossible. Every surgeon doing much abdominal work has had the appendix rupture in delivery. Certain precautions, carefully observed, materially lessen the incidence.

The first essential is complete relaxation of the abdominal wall. This, in our experience, is best assured, except in small children, by the administration of a spinal anesthetic.

Next, it is important that the abdominal incision be placed so that it will best afford adequate access to cecum and appendix. When the preoperative diagnosis of acute appendicitis is not in doubt we use the muscle-splitting incision. If exposure proves inadequate the incision in the skin and in the external oblique muscle may be extended upward or downward as indicated and an additional muscle-splitting opening be made through the internal oblique at the desired level. By gently packing off the small intestine with warm moist laparotomy pads the cecum may be exposed and the base of the appendix be recognized. Traction made on a tape passed through its mesentery and around the base facilitates identification and freeing of the distal portion of the appendix.

The third essential is deliberation and gentleness in the handling of a structure which is often gangrenous and adherent, and deeply situated and difficult of access.

The subject of rupture of the appendix at operation aptly illustrates a fundamental principle in the care and in the prognosis of cases of early perforation. In our experience cases operated upon shortly after perforation, before peritonitis has begun, rarely develop peritonitis if, along with the appendix, the escaping infectious appendiceal contents are removed. With this done and continuous soiling prevented the peritoneum in most cases is sufficiently resistant to infection to successfully overcome the contamination. We do not remember to have lost a patient whose appendix ruptured in delivery. It is surprising that, in sharp contrast to this experience and the principle which we believe it illustrates, in a series of nearly 20,000 clinical records in a statewide survey of the cases of acute appendicitis in Pennsylvania, Bower (S. G. & O., July, 1941) found that of the 70 patients who suffered rupture of the appendix at operation, 58 died—a mortality rate of 83 per cent. The mortality

of the localizing, spreading or abscess groups was 24.35, 24.05, and 1.2 per cent, respectively. This investigator says: "Most of these patients developed high fever and tachycardia almost immediately after operation. Some of them died so quickly that their abdominal walls were rigid at death. Distention, the usual accompaniment of spreading peritonitis deaths, did not have time to develop. Some of them never regained consciousness and died in a toxic delirium."

In every series of cases of acute appendicitis seen by us in the literature the greatest mortality has been in the cases of acute perforation with diffuse spreading peritonitis. We cannot understand why in the Pennsylvania series the mortality should be greatest in the early cases in which the appendix was removed before peritonitis has developed—a group with which our own experience has been quite gratifying.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

CLOSED INTRAPLEURAL PNEUMOLYSIS

COLLAPSE therapy, more particularly artificial pneumothorax, is the most valuable and effective method of treatment which has been introduced since the discovery of the cause of the disease. The effectiveness of this method of treatment is oftentimes interfered with by the presence of adhesions, varying from a single cord-like adhesion to an extensive adherence of the two layers of the pleura, completely obliterating the pleural space. Some degree of pleural involvement may be expected in almost every tuberculous infection of the lungs which has progressed beyond the minimal stage, and this fact is important because closure of pulmonary cavities, essential in collapse therapy, may be prevented by adherent pleurae.

In an article in the August, 1941, issue of *Diseases of the Chest*, Hoffman and Brentigan quote Alexander's experience of, in 42-50% of his cases, effective collapse being prevented in varying degrees by pleural adhesions. These authors state that, in their series of 100 consecutive cases in which pneumothorax treatment was tried, in 26% there was complete, or so nearly complete, obliteration of the pleural space, that only slight collapse could be obtained, and in 62% adhesions prevented a satisfactory collapse.

In such cases pneumothorax is inadequate, and for the great majority they advocate closed pneumolysis, or the severing of the adhesions by means of the cautery, as the method of choice. Some prefer to do a phrenic nerve interruption first, following, if this is unsuccessful, with a closed pneumoly-

sis. The closed pneumolysis they regard is the proper primary supplementary measure, because phrenic nerve surgery rarely causes a sufficient rise of the diaphragm for cavity closure, particularly when the adhesions are horizontal, and time is wasted in waiting to see if the phrenic interruption will get the desired results. The routine use of the phrenic operation is deprecated. Once a collapse is started the closing of the cavity, or the control of the disease, should be accomplished as quickly as can be done with safety.

High intrapleural pressures are opposed because of the danger of rupture of the lung, and from the fact that the majority of pleural adhesions in these cases are too thick to stretch to a degree sufficient to allow closure of cavities. In fact, the writers believe that the reverse of stretching is likely to occur because pleural adhesions are the result of tuberculous lesions in the two layers of the pleura and it is characteristic of fibrous tissue to contract. Is is not an infrequent occurrence for the shortening of pleural adhesions to completely close the pneumothorax space, and this quite rapidly.

There is general agreement that the greater proportion of satisfactory pneumothoraces become successful within three months and that to continue partially successful pneumothorax beyond this time is unwise. Although the authors admit that there is no *best* time interval, they favor shortening this three months' waiting period, as young adhesions are easier to cut and bleeding is less likely to occur. A thorascopic examination is advised as soon as a pneumothorax is found to be ineffectual, and the adhesions severed immediately, if the operation is considered safe. The authors have found all types of x-ray unsatisfactory in judging whether or not an adhesion can be cut. The ideal pneumothorax is the selective type in which the diseased portion of the lung remains collapsed, the sound part only partially collapsed. Adhesions prevent selective collapse, hence it is necessary to sever the adhesions in order to obtain this result. The writers prefer the galvano-cautery to the electro-cautery for this work, although they state that the individual operator will use that instrument which has given him best results.

Frequently, because of numerous adhesions, it becomes necessary to perform the operation in several stages, because too long an operation might cause injury to the chest wall from the heat and pressure of the instrument. The authors rarely prolong any one operation over 60 minutes.

Frequent fluoroscopic examinations for the first week after a closed pneumolysis are necessary, as a pneumothorax can be lost by passage of air through the operative puncture wounds. This loss is often evidenced by subcutaneous emphysema. Fluid is a

routine complication following pneumolysis, but does not often cause trouble, unless infected, the rule being spontaneous absorption. Tuberculous empyema was a complication in 5 per cent of the cases reported, but most of these cases were controlled by means of irrigation and antiseptics. One pneumo- had to be converted into an oleo-thorax.

Summary of conclusions:

1. When adhesions prevent a satisfactory collapse, the operation of closed pneumolysis is the operation of choice.
2. The sooner it is done the less the possibility of complications.
3. The only accurate method for determining the operability of adhesions is an examination by a thoracoscope.
4. A closed pneumolysis is less hazardous than maintaining an ineffectual pneumothorax, or an ineffectual phrenic nerve crushing.
5. The indications for bilateral, are the same as for unilateral, pneumolysis.

UROLOGY

For this issue WALTER E. DANIEL, M.D., Charlotte, N. C.

CHRONIC URETHRITIS IN WOMEN

NON-SPECIFIC chronic urethritis with narrowing of the urethral lumen in females is much more prevalent than is commonly supposed. I do not use the term to include dense fibrous urethral strictures resulting from repair following wholesale tissue destruction or the congenital stricture of the urethral meatus. The term is used to include only the low-grade chronic infections of non-specific character in the urethra resulting in slight narrowing of the urethral lumen and symptoms which are out of all proportion to the amount of pathology present.

The female urethra is so situated that it is constantly being bathed in infected material from the genital tract. Add to this the trauma of intercourse and parturition and later senile changes, and the stage is set for the common bacteria to infect the urethra and start a train of symptoms which has caused many otherwise normal women to be classified as neurotic.

The local symptoms consist of frequency of urination, burning, urgency, dysuria and nocturia. Pain in the stem of the bladder is a common complaint. Referred pains from the female urethra may simulate both ureteral and pelvic disease. Folsom and Stanton intimate that many cases of supposed ureteral stricture are relieved by the urethral dilatation incident to cystoscopy.

A specimen of urine taken by catheter contains very few pus cells unless there is a coexisting cys-

titis. The lumen of the urethra is narrowed and as seen through a panendoscope is congested and granular. At times small polypoid projections are seen hanging from the superior margin of the vesical neck. The urethral meatus is sometimes reddened with mucosal folds projecting from its inferior margin which on section show only chronic inflammatory reaction. Because of the appearance of the meatus the condition is frequently mistaken for a urethral caruncle.

Simple urethral dilatation is oftentimes sufficient to relieve the symptoms. However, topical applications of 20 per cent silver nitrate solution applied best through a urethroscope are usually necessary to eradicate the infection.

If the lowly urethra is examined and appropriate treatment instituted when the condition just described is found, many women having vague pelvic and flank pains together with mild bladder symptoms can be cured and will remain forever grateful.

Thompson-Daniel Clinic
Professional Building

LYMPHOGRANULOMA VENEREUM

(A. W. Grace, New York, in *Bull. N. Y. Acad. of Med.*, Aug)

A widespread, contagious venereal disease of human beings caused by a minute organism.

The infective agent enters the body through the skin of the external genitalia without, however, always producing a demonstrable lesion at the portal of entry. It may also enter by way of the mucosa of the anal or rectal canals, and, much less frequently, by extragenital routes. The virus multiplies readily in the lymph nodes draining the affected areas, and probably, also, in the anal and rectal mucosae. The lesions are inflammatory, subacute or chronic, often marked by the development of multiple small foci of suppuration.

Diagnosis of lymphogranuloma venereum is made by means of a skin test (Frei) of a high degree of specificity and sensitivity. Treatment with certain members of the sulfonamides, sulfanilamide and sulfathiazole, has been very successful.

HOSPITALS

R. B. DAVIS, M.D., Editor, Greensboro, N. C.

HOW CAN THE PRIVATE NURSE BE HELPED

THE private nurse is neither lazy nor selfish but is weak in ability to solve financial problems. This is not her fault; rather it is the fault of the educational system before and after she enters training. The average nurse doing private duty does not make sufficient income to adequately support her and lay up something for a rainy day.

Since the nursing profession constitutes such a large part of the successful practice of medicine and good hospitalization it is the duty of those representing these professions to look upon this situation of the nurses with a sympathetic heart and under-

standing mind. A large number of graduate nurses have been led to believe that the physicians and hospital administrators are not in sympathy with their cause. The writer does not feel that it is in the scope of this paper to discuss this phase of the nursing profession. Suffice it to say that the sins of misleading the nursing profession will be rightly put upon the guilty authorities ere this generation passes away.

The private nurse has reached such a condition in her economic life that recently she has determined to do something about it. However, that something is going to reduce her income rather than increase it. It will diminish her contacts with the sick public and it will dangerously reduce the value of her contribution to sick mankind. None of these is her desire. It is sincerely hoped that every nurse in North Carolina will have an opportunity to read and take to heart the purpose of this paper. If she will she will be able to see herself as others see her and then see herself as she would like to be seen.

The following is a plan which has occurred to me as worthy of their consideration and which is applicable to the problem of finance.

The average patient in the ward and in the semi-private room usually is as sick as the person in the private room; however, it is seldom that these patients feel able to have special nurses, and if they do it is often a considerable time before the nurses are paid. The nurse has prepared herself to render service to sick mankind. There is no reason to suspect that she is happy doing anything else, and least of all when she is loafing and draining the savings she has buying three meals a day. There can be no argument about what she had rather do. The only reason that she is not nursing the poorer class of patients is because she has not been taught economic laws.

The average hospital sells its service to the individual according to his ability to pay and the patient's need of the service. The average physician does the same thing. Therefore, during the last ten years the services of both hospitals and physician have been greatly increased. Medical schools have become so crowded that hundreds have been turned away. Almost every hospital, large or small, new or old, has enlarged its bed capacity. This is not true of the graduate nurse's service. The supply of graduating nurses to take care of the sick, particularly in the South, has been diminished to a very dangerous degree. The population is increasing and the need for nursing service is increasing but the number of nurses is not keeping pace.

There should be immediately an increase in the facilities for educating young women to become nurses. The private nurse, if she will, can see that

it is far better for her pocketbook to render service to the poor patient at a livable wage than it is to be idle waiting for a call, during which time she uses up the balance of a nice fee which she received last week for a few days' nursing. On the other hand, it is clearly the duty of the hospital and the doctor to see that she does not get stuck too long on a case where the patient is unable to pay a fee which she might otherwise be entitled to.

The nursing profession would be wise to notify the hospitals and the medical profession that it is prepared and willing to nurse every patient in the hospital who needs special nursing for a fee equal to that charged by the hospital for the room or bed occupied by the patient plus her board with this one proviso, that it shall be considered entirely ethical for the special nurse to leave any case after five days' service for one on which the patient is willing and able to pay her more. The five-day period is not an arbitrary period but should be settled upon by the nursing association, the medical association and the hospital association.

If this system were adopted it would establish valuable assets to the nursing profession. It would render service to a vastly larger number of sick men and women. It would vastly increase the total income to the nursing profession of any community. It would be the most favorable propaganda which the nursing profession could possibly inaugurate. It would increase their contacts to such an extent that no one very ill would consider going to the hospital without having a special nurse. This would mean a tremendous gain in volume of work. And last, but not least, it would occupy the graduate nurse's idle days during which time she is unhappy and is spending for the necessities of life what she has saved.

OBSTETRICS

HENRY J. LANGSTON, M.D., *Editor*, Danville, Va.

PUERPERAL INFECTION

THE vagina is the only situation in nature¹ that the anaerobic streptococcus is found with any frequency.

The principal organism associated with puerperal infection is the anaerobic streptococcus. In most instances there is no evidence of pathogenicity in the postpartum period. Infections with this organism follow most often a prolonged exhausting labor, often with ruptured membranes, and usually terminated by difficult operative procedures. Careful antepartum study should anticipate

1. Wm. E. Studdiford, New York City, in *Bull. N. Y. Acad. of Med.*, Aug.

and should lead to the decision to deliver a certain proportion by cesarean section.

Lowering the morbidity has followed the use of mercurochrome instillations during labor. The organisms rapidly reappear and the new flora contains many organisms not present before; so these instillations are regarded as of no value, and since they may injure the defense mechanisms of the vaginal mucous membrane, they may be harmful.

Gonococcal infections respond readily in the majority of instances to sulfanilamides. In refractory cases additional treatment with sulapyridine will often clear up this infection. The value of sulapyridine in pneumococcus infections, both with and without serum, has been abundantly demonstrated and should be of value in both primary and secondary genital infections. Sulfathiazole and sulfamethylthiazole appear to be better agents in combatting staphylococcus infections.

The advances in chemotherapy have been of great assistance in the treatment of a small group of cases caused by certain specific organisms. Fortunately, in this group we find infections of the most severe and fatal type, notably the Group A beta-streptococcus. In the vast majority of puerperal infections a mixed group of organisms is present. In a few of these cases we know, and in a large number we have cause to suspect, that the anaerobic streptococcus plays a leading part. There is no known agent which affects favorable infections caused by this organism. This may well be due to the type of lesion produced which is, in a high proportion of cases, suppurative thrombophlebitis.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

INSECTS IN HOSPITALS AND HOMES

EVERY family doctor should know about the destruction of insect and rodent pests. Here are some British¹ methods.

Houseflies will travel 13 miles in a couple of days, and contamination can take place two days after infection of the fly, which means that a source of fly trouble can be manure or refuse heaps, stable yards, or privies up to that distance away!

These flies breed in fresh manure (not more than a fortnight old), a blob of saliva is ejected to dissolve the food before they suck it back in solution, contaminating much more food than they consume. Their minimum life is 34 days.

Manure can be sterilized with iron sulfate without injuring its agricultural use, or by stacking the fresh manure daily upon a wooden platform, supported by foot-high posts over a 4-inch concrete

basin kept full of water. The flies will choose this fresh manure for breeding sites and their maggots leaving the manure to seek a pupating site, fall into the water and are drowned. Up to 99% of the larvae can be destroyed by this method.

Indoors, flies, mosquitos and gnats are best prevented by the use of repelling colors. Pale-yellow is the most repelling color where gnats or mosquitos are concerned. Curtains, lampshades, fanlights, walls and ceilings of this color will distract the insects. Discourage houseflies which are attracted to rooms by whitewash, white ceilings and walls.

Pale blue is a better color than white; government stables in Denmark removed their fly trouble by using a blue wash instead of a whitewash.

A saucer of 10% formalin, as the only available drinking material in a room, will attract and kill the flies, and a 2% formalin spray is effective on their dancing parties, which generally consist of male lesser houseflies in their jerky courtship flight. Poisoning fly papers, hung from lamp brackets, etc., are most effective when the fly is attracted by an enticing odor like that of geranium or rose oil. Insects on ground, wasps, blue bottles, biting gray stable flies, ants, and bees are generally only accidental visitors, but if they appear regularly, there is a nearby breeding place. Wasps' nests may be in the ground, amongst tree roots, rat or rabbit holes, banks, in hollow trees, or even suspended in out-houses, etc. The nest has to be located, but nothing is done until dusk, when all have returned home. Creosote or gasoline is poured down and the entrance well plugged up.

Cockroaches and crickets. The most effective control is a simple trap, made from a glass jam jar or any handy size, baited with cooked vegetable, banana or orange peel, or meat flavored with anise seed or beer, and fitted with an inverted cone cap of stiff, smooth paper with sufficient space at the apex for the insect to slip through. The odor of the bait attracts the night-hunting cockroach or cricket, which gains access to the top by a board or cardboard gangway or steps and, attracted by the odor, slips down into the jar, whose smooth glass sides prevent its escape. A number of such traps can be placed in likely haunts in the evening and collected in the morning, the captives being tipped out into boiling water to kill them.

Poison baits for cockroaches and crickets consist of three parts sodium fluoride to one of pyrethrum powder, or borax or pyrethrum, flavoring these with castor sugar or chocolate.

For rats and mice, traps or poison baits should be varied, numerous. Attractive bait is fish, oatmeal, or rolled oats.

A bait, harmless to domestic animals, to be wrapped in small twists of tissue paper, can be

1. Eric Hardy, Liverpool, Eng., in *Clin. Med.*, Aug.

made from one part by weight of liquid red squill extract; $2\frac{1}{2}$ parts of fine oatmeal or rolled oats; and $1\frac{1}{2}$ parts of fat dripping—mix into a paste.

SECTION OF THE ANAL SPHINCTER

AN INCISION that I have found of great help in my proctologic work is the subject of an article¹ which sets forth the advantages in a clear way.

The treatment of chronic anal fissure often entails a partial posterior anatomy, since often the condition has existed for so long a time that there is a thickening of the entire posterior commissure, which, with hypertrophy of the sphincter from long-continued spasm, results in a narrowed anal outlet. Even though this is not the case, a posterior incision relieves spasm and the resultant pain, giving the fissure an opportunity to heal, and is preferable to division.

In the removal of numerous large internal hemorrhoids one frequently finds it necessary to remove so much tissue that the outlet has been materially decreased in size. The time to determine whether or not this has been done, and to remedy it, is while the patient is still on the operating table, and not three weeks later. If at the completion of the operation the tip of the index finger enters the canal only snugly, it is probably too narrow for future comfort, and an incision should be made in the posterior commissure to enlarge it to the needed size. Even should this be not necessary it will do no harm. Sutures and ligatures with their resultant tension contribute largely to the discomfort following hemorrhoidectomy, hence it is my practice to make posterior anatomy in all patients where there is any doubt as to the size of the lumen, this procedure diminishes postoperative pain.

An incision in the posterior commissure is usually productive of but little bleeding. If there is any of consequence it is easily controlled by a ligature or two since exposure is easily attainable under local anesthesia. The incision should be made with one finger in the canal to determine the progress made in enlarging the lumen. The wound is packed with a strip of either dry or vaselined gauze which is left in for 24 or 48 hours. Doses of mineral oil or some form of demulcent should be started the same day as the operation, general diet, and hot sitz baths taken once or twice a day. From the second day on the finger is inserted every two or three days until firm healing has taken place. The author has never seen an anal sphincter rendered either wholly or partially incompetent by this procedure.

ACUTE CORONARY OCCLUSION with localization of pain in the upper part of the abdomen: no other extraabdominal condition so closely counterfeits acute abdominal emergencies.—A. R. Elliott.

CARDIAC EMERGENCIES AND THEIR TREATMENT

FOR most of the conditions about which we are consulted there is time for reading up. Emergencies demand prompt action. Here is abstracted an article¹ for brushing up your information which is often needed right now.

The emergencies associated with acute myocardial infarction are pain, left ventricular failure and the arrhythmias.

Pain is frequently an emergency because of its severity and duration. Usually it is substernal or parasternal, heavy, pressing; it may be epigastric. It lasts usually an hour or longer and frequently radiates to the left shoulder and down the inner aspect of the left arm and the ulnar side of the hand; it may radiate to both shoulders, to the back, or to the jaw; it is often associated with nausea and vomiting and peripheral circulatory collapse.

Morphine in doses of an eighth to a fourth grain, and repeated at half-hour intervals if pain is not relieved. Once the severity of the pain has been lessened or abolished, codeine gr. $\frac{1}{4}$ th to $\frac{1}{2}$ with phenobarbital gr. $\frac{1}{4}$ to $\frac{1}{2}$ t. i. d., p.c., may be used for a few days longer. Nitroglycerin is mentioned only to discourage its use. It may produce headache, ectopic beats, tachycardia and lowered blood pressure.

In left ventricular failure with dyspnea, cyanosis, weakness and sweating in its early stages and basal rales and pulmonary edema as the failure increases, there is usually a fall in blood pressure, although at the height of pain the blood pressure may be increased. The pulse may or may not be accelerated. In mild cases absolute bed rest, morphine for pain, and oxygen inhalation of 40 to 60 per cent will be sufficient; severe cases with pulmonary edema require 100 per cent oxygen, and atropine sulfate gr. $\frac{1}{150}$, repeated in 15 to 20 minutes. In severe dyspnea, cyanosis and congestive failure, bleeding of 350-450 c.c. is often promptly effectual. Digitalis is not used in the first few days of acute myocardial infarction unless continuous auricular fibrillation occurs or pulmonary engorgement, with swelling of the cervical veins, enlarged liver and edema. For rapid digitalization tincture of digitalis may be given by mouth in one dose, 1 minim per pound of body weight; or $\frac{1}{4}$ th of the entire dose intravenously or intramuscularly and $\frac{1}{8}$ of the total dose every four hours for four doses. Then gr. $1\frac{1}{2}$, t. i. d., p.c., until patient is completely digitalized; watch carefully for nausea, vomiting, premature beats and tachycardia.

In cases of myocardial infarction which are complicated by Cheyne-Stokes breathing or coma, aminophyllin intravenously in doses of 5 to $7\frac{1}{2}$

1. H. E. Hullsiek, St. Paul, in *Minn. Med.*, Sept.

1. M. A. Murphy, Brooklyn, in *Med. Times*, Aug.

grains, injected very slowly may benefit. The effects of this drug are very transitory.

Mercurpurin relieves congestive failure through diuresis.

Irregularities of the heart are quite common in the course of myocardial infarction. Serial electrocardiograms are important in the diagnosis and for proper therapy. The important arrhythmias of myocardial infarction in the order of their frequency and importance are: auricular fibrillation, auricular flutter, ventricular tachycardia, paroxysmal, sinus and auricular tachycardia, partial heart block and complete heart block.

Auricular fibrillation and flutter are treated by digitalis, the slow or the rapid course, according to the severity of the case.

Paroxysmal auricular tachycardia by carotid sinus pressure or ocular pressure; if not successful digitalis in adequate doses.

Ventricular tachycardia calls for immediate administration of quinidine sulfate: grains 10, q. 2 h. for six or seven doses and then q. 3 or 4 h. until heart beat is regular. In some cases it may be necessary to give quinidine sulfate gr. 3 every hour or two. This arrhythmia may lead to ventricular fibrillation and death. Therefore prompt and energetic treatment is necessary.

In complete heart block, 1 c.c. of adrenalin chloride (1-1000) is given and repeated every half hour until cardiac rate is either increased or it changes from a labile rate to a more fixed one in which standstill of the ventricle does not occur.

When premature beats of the ventricle occur, quinidine sulfate gr. 3 four i. d. may be given to abolish the focus of irritable muscle in the ventricle.

In terminal asystole and ventricular fibrillation death is usually so sudden that treatment (such as intracardiac injection of adrenalin) is of no avail.

If the systolic blood pressure remains above 80, it is not necessary to do anything about it, but if it falls much below 80 for any length of time, the patient will die no matter what is done. Caffeine sodium benzoate is an excellent means of keeping the blood pressure above this critical level.

I do not believe that atropine is of much value in left ventricular failure with pulmonary edema.

In the discussion Dr. Bauer said oxygen is almost, if not quite, as potent as morphine in relieving cardiac pain.

EXTRA-ABDOMINAL DISEASES THAT MAY CAUSE ABDOMINAL SYMPTOMS

(E. G. Billings, Denver, in *Wisc. Med. J.*, Aug.)

A study of over 2,000 patients in the Colorado General Hospital indicates that:

One of every 14 patients consulting a physician for his various aches and pains and his disordered bodily function-

ing is not sick because of primary organic disease.

Patients requiring psychiatric care are as a rule seen in consultation by five times more physicians than are patients of other sorts. They are practically always seen at some time by a surgical consultant. The adults, in the vast majority of cases, have complaints referable to the abdomen. Of our female psychoneurotic patients having symptoms involving the alimentary tract, those 26 years of age have, on an average, undergone without benefit at least one abdominal operation; this is true of one-half of the male psychoneurotic patients.

Many personality difficulties begin as rather simple reactions to ordinary life situations that should be recognized by any physician. The prevention of mental ill health lies in the hands of the family physician to whom the patient first goes for help.

In the diagnosis of disorders producing abdominal symptoms, it is important to obtain a complete statement in the patient's own words of the circumstances under which the complaint began. Physical and neurologic examination with indicated laboratory tests, his mood, sentiments and attitudes, his beliefs, his thinking and his memory should be as surely tested as his ability to down and pass through his alimentary tract a barium sulfate-laden meal.

The next most important procedure is to explain the disorder to the patient in words that he can understand and not to instill in him further anxiety and insecurity by making some organ or bacterium the scapegoat. If this is done in an orderly and understanding way and if the patient is essentially one for psychiatric care, treatment is 50 per cent accomplished, for the patient begins to understand and to see opportunities for correcting the problems rendering him ill.

A FAMOUS QUACK OF A CENTURY AND A HALF AGO

(Hon. Wm. R. Riddell, Toronto, Canada, in *Med. Rec.*, Sept. 3rd)

The most noted of all the noted quacks in London in the 18th century was "Dr." James Graham (1745-1794). Born in Edinburgh, he took lectures in the School of Medicine of the University of that city. There is no record of his receiving a degree. He came, about 1768 or 1769, to Philadelphia where he practiced as an oculist and aurist; and there he conceived the "electrical bed," upon which most of his fame rests.

Returning to Britain in 1774, he practiced as an oculist and aurist at Bath. The next year he went up to London. In 1779, he established on the Royal Terrace, Adelphi, his "Temple of Health," an elaborately decorated house facing the Thames, which is said to have cost 10,000 pounds. There he gave lectures at high prices, sold his medicines, and exhibited his shining electrical machines to non-patients. For a time he had as his "Goddess of Health" in his temple of Apollo, Emma Lyon, later to become the mistress of Hon. Charles Grenville, and still later, Lady Hamilton, the favorite of Lord Nelson.

The most noted of his medicinal means was his marvellous bed described by himself as "my celestial or magneto-electrical bed, which is the first and only one that ever was in the world, supported by six massive glass pillars, with Saxon blue and purple satin hangings, perfumed with Arabian spices in the style of those in the seraglio of the Grand Turk." This "any gentleman and his lady desirous of progeny . . . may, by a compliment of a 50 pound bank note, be permitted to occupy for the night."

Irvin Barnes, arrested for drunkenness because of his staggering gait and vomiting on the street, was found suffering from benzene poisoning. Irvin works in a straw-hat factory.

PULP TRACTION: THE STILETTE METHOD

(B. T. Keon-Cohen, Melbourne, in *Aust. & New Zealand JI. of Surg.*, July)

Traction is necessary in the treatment of certain fractures of metacarpals, metatarsals and phalanges. The most efficient method of getting such traction is by means of a fine stainless steel wire through the pulp of the terminal phalanx.

The technique is simple. Trauma is negligible. A fine wire (gauge 30) is used, with complete freedom, so far, from infection and/or wasting of the pulp.

As usual, a plaster cast is applied to the forearm or leg. Incorporated in the cast, and extending distally so as to clear the extended fingers or toes, is a loop of stout wire, shaped at the end like a Thomas splint.

Local anesthesia is quite satisfactory. The needle selected is the smallest that will "take" the wire after the manner of a stilette.

1. Transfix the pulp of the terminal phalanx with the needle.

2. Thread the wire through the needle like a stilette.

3. Secure the distal end of the wire and withdraw the needle. The wire is left *in situ*.

The "spreader" must be wide enough to ensure that the wire, distal to the level of transfixion, clears the side of the pulp. It is made to measure from an ordinary wooden tongue spatula.

Traction is obtained by means of fine rubber tubing passed proximally through a hole bored in the center of the spreader (knotted to prevent it pulling through), and attached distally to the wire frame. The tension of the tubing is adjusted as required, so that the traction is both elastic and continuous.

TREATMENT OF RICKETS WITH A SINGLE MASSIVE DOSE OF VITAMIN D

(I. J. Wolf, Paterson, in *Jl. Med. Soc. N. J.*, Sept.)

Five cases of active rickets in infants between the ages of five and 18 months were treated, each with a single massive dose of vitamin D, called *ertron*. The official name for this form of vitamin D is "calciferol" or "viosterol."

Ertron is marketed in capsules of 50,000 units each. Six capsules, or 300,000 units, are opened and the powder is mixed with the formula or Pabulum. Two feedings are given, or a total dosage of 600,000 units. No toxic symptoms were observed; on the contrary, those infants who suffered from irritability and lack of well-being as a result of the rickets showed a remarkable change in their condition within a few days.

The clinical diagnosis of rickets was supported by roentgenograms and the blood chemistry.

INFECTIOUS RELAPSE IN SYPHILIS

(J. C. Kern, Lewiston, Ida., in *Northwest Med.*, Sept.)

Infectious relapse in syphilis is more frequent than any statistical studies would indicate. Relapse is defined in this study as any mucocutaneous recurrence of acute syphilis which appears after the institution of antisymphilitic therapy.

For this study 80 cases were selected as examples. Those cases with questionable histories antedating their first appearance at the clinic were omitted.

The site of relapse were the skin, genitalia and oral mucous membranes. Of the 80 cases, 55 were Wassermann-fast throughout treatment; in 21 the Wassermann and Kahn tests became negative under treatment and relapsed to a positive reaction coincidental with the clinical relapse. In four cases the serologic tests for syphilis were only partially positive at the time of relapse. Thus no case presented entirely negative Wassermann and Kahn reactions

at the time of the clinical relapse. Sixty of these were considered to have inadequate treatment. The 12 cases receiving adequate treatment (20 or more arsenicals with a corresponding amount of heavy metal) relapsed at much longer intervals after the onset of infection—none in the first year, one in the second, four in the third, seven between the third and eighth year.

These cases illustrate the necessity for continued observation of patients after completion of routine syphilotherapy.

Relapse occurs most frequently in patients whose treatment is begun in the primary stage of infection, slightly less frequently when treatment is begun in the secondary stage, and extremely infrequently when it is begun in the latent stage.

Two-thirds of the patients developing mucocutaneous relapse have lesions at sites which are particularly favorable for transmission of infection.

Serologic tests for syphilis are positive in practically all relapse cases.

As a rule, the frequency of relapse decreases as the number of arsenical injections increases.

NONSPECIFIC-PROTEIN THERAPY IN OCULAR DISEASE

(T. E. Sanders, St. Louis, *Jl. Iowa State Med. Soc.*, 31:51, 1941)

Nonspecific-protein therapy is one of the most valuable procedures in ocular therapy.

Fever is the best criterion as to the severity of the reaction, and of the results to be expected.

Typhoid vaccine has proved the most effective agent. As an initial dose for a healthy man 50 million, for a woman, 35 million. For children between 5 and 10 years of age, a dose of 10 million, doubling each successive dose keeps the injection at a reacting level. If a reaction is severe, the same dose may be used, or increased only one-half. If practically no reaction, three times the dose may be used, usually a maximum of six is given in a single course, every other day, of any typhoid-paratyphoid vaccine, such as that used for active immunization against typhoid fever, properly diluted.

After the injection of typhoid vaccine or antigen H, the patient is advised to remain in bed, and fluids are forced. Salicylates are discontinued during the next 24 hours, because they tend to suppress the rise in fever. Usually the discomfort and inconvenience to the patient are surprisingly small.

The author believes that foreign-protein therapy may be indicated at times in any type of ocular inflammation and holds that its use in certain conditions should be almost routine. In inflammation of the uveal tract its use tends to shorten the course and reduce the permanent damage. Its use is almost routine in severe iritis and iridocyclitis. It is valuable in the management of ocular trauma. Practically every case of ocular inflammation or infection should have the benefit of foreign-protein therapy.

BRUCELLOSIS

(W. M. Simpson, Dayton, O., in *Bull. N. Y. Acad. of Med.*, Aug)

Because brucellosis presents many symptoms and signs common to typhoid fever, malaria, tuberculosis and influenza, many physicians have arrived at a tardy diagnosis only after repeated negative Widal reactions, failure to demonstrate the malaria plasmodium, and inability to elicit physical signs or x-ray evidence of tuberculosis. The disease has been confused with acute rheumatic fever, subacute bacterial endocarditis, bronchitis, pyelitis, appendicitis, cholecystitis and tularemia.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE TREATMENT OF THE MENOPAUSAL SYNDROME

MENOPAUSAL SYMPTOMS come on when the ovarian secretions, especially hormones, become deficient in quantity or quality. Nervousness is often very severe. There are often hot flashes, chilly sensation either or both. The symptoms become more severe, more pronounced and the individual may be completely incapacitated.

The many women who go through the menopausal period without any great disturbance are extremely fortunate.

It is not uncommon during this period for a woman to undergo a great change in personality, destroying the peace and happiness of the home. The unfortunate woman, not understanding why, becomes estranged from her own family and friends, who do not know about these things and judge the patient too harshly, possibly accuse her of being mentally unbalanced, when all that is wrong is that she is going through a period of change which she cannot help, and for which very often little is done.

Theoretically, the treatment of the menopausal syndrome is simply to supply a substance or some biological product which supplies to that individual the hormones produced by the ovaries and correlated glands. The anterior pituitary may be considered a part of this system. Many patients are greatly, but not completely, relieved by this treatment. Each patient must have a very careful study in order to determine what other conditions need treatment and what to do for the patient.

Where the menopausal syndrome has become severe and the nervous and mental reaction extreme, it is essential that the patient be taken firmly in hand and treated promptly and thoroughly. The first thing is to get the patient away from her family and friends and in the care of a competent and sympathetic nurse who is agreeable to the patient.

Treatment should be directed toward obtaining the quickest possible relief for the patient. See that she gets a few nights of comfortable and restful sleep. For this purpose, thorough sedation is necessary. We then start giving either an estrogenic hormone or Stilbestrol. Our own preference is for Stilbestrol. In case it causes nausea the dose is to be reduced. The action of this drug is prompt and definite. Just how much Stilbestrol to give is a question which must be decided in each individual case; it should be given until the symptoms are controlled, so far as possible to do so with this

drug. It is necessary that we give this in considerable dosage at frequent intervals until relief is given from the hot flashes and extreme nervousness. We usually give one milligram of Stilbestrol in oil intramuscularly once daily for two or three days until the symptoms subside. We should then continue moderate sedation and the administration of Stilbestrol in gradually reduced dosage until we have the patient in the best possible condition.

We have found that when we once get the nervous symptoms relieved and keep them relieved for a period of two or three weeks that we then only need to give very small doses at much longer intervals.

There are a great many other conditions that must be treated at the same time, if present. Anemia should be appropriately treated. Diseased teeth, sinuses or tonsils, hemorrhoids, pelvic conditions, leucorrhea, gastrointestinal disturbances—all these things must be looked for, accurately diagnosed and properly treated. Unless we take care of the other things, the treatment for the menopausal syndrome itself may not give the patient anything like the relief that is given where all possible sources of trouble are carefully searched for and treated.

Three major indications in the menopausal syndrome are:

1. Give proper treatment.
2. Keep up the treatment until the patient has passed that trying period when treatment is no longer necessary.
3. Find and treated associated disease conditions.

DIAPHRAGMATIC HERNIA DEVELOPING SIX YEARS AFTER A KNIFE WOUND IN THE LEFT CHEST

A MAN 32 years of age was brought to the hospital complaining of pain in the left side and across the middle of the abdomen. He stated that while he was swimming, three days before, he felt a sudden, severe pain in the left abdomen. He returned to his home but did not call a doctor until some time later, when he was immediately referred to the hospital.

This man had developed what was apparently an obstruction of the colon near the splenic flexure. At the same time, he developed an acute pleural effusion with a dense shadow in the lower half of the left chest.

A barium enema revealed stoppage at the sigmoid margin. A diagnosis of obstruction of the colon at the splenic flexure was made and operation was done immediately.

On opening the abdomen it was found that there was a large loop of the colon, principally the trans-

verse, which had entered through a diaphragmatic opening, posteriorly, and was up in the left pleural cavity. The opening was so tightly filled that it was necessary to clip the margin to permit the introduction of a tube into the left pleural cavity, to allow air to enter and make it easier to bring the colon back down into the abdomen. The opening in the diaphragm was sutured and the abdominal incision closed.

This patient states that six years prior to this time, he had a knife wound in the back. Examination of the scar showed this to be in the lower costophrenic area and it is evident that the knife had penetrated through the costophrenic space and the diaphragm, producing an opening between the left pleural cavity and the abdomen. Ever since this accident he had considerable pain in this side. The considerable amount of omentum in this opening and tightly adherent makes it probable that the opening was plugged at the time of the accident, which accounts for the fact that he had considerable pain across the abdomen and in the left side for the past six years.

The strain while in swimming and the pressure from the abdominal muscles evidently helped to force the transverse colon through this opening into the left pleural cavity, causing a diaphragmatic herniation of the large segment of the transverse colon and producing a certain amount of obstruction of the colon.

Diaphragmatic hernia is not so uncommon as might be supposed and sometimes, when there is no obstruction, may give curious symptoms, but any trouble in the abdomen followed by trouble in the chest, such as pleural effusion, should remind us of this possibility.

In this case the x-ray picture of the chest showed what was apparently a pleural effusion and since barium did not pass up into the portion of the colon which was in the chest, naturally there was no way of making a definite diagnosis by x-ray examination, as would have been the case had some of the barium passed on up into the left part of the colon which was above the diaphragm.

THE INCIDENCE OF UNDULANT FEVER

A DISEASE which is very prevalent and which often goes unrecognized is undulant fever, and its being one of the most protean of all diseases and in many instances of such mild form makes it difficult to recognize, often not recognized at all. The specific tests are not always positive. The symptomatology varies so widely that it may simulate any one of a number of diseases.

The temperature curve, charted over a period of a few days, is more or less typical of the disease, often giving a definite clue to the diagnosis.

The skin test is very helpful, also the agglutination test; both may fail us when the disease exists in a very mild form—the form which gives most trouble in diagnosis. A careful study, however, of the patient who has a continued fever and the use of the specific tests will usually enable the doctor, after a few days, to make a diagnosis.

The treatment of undulant fever is not easy. There are many different treatments, each of which has some merit. In our experience fever therapy has given quickest and most lasting results. This treatment, however, cannot be taken except by fairly robust persons.

The vaccine treatment gives gratifying results in some cases.

Blood transfusions of whole blood from non-immune donors is of great help; of more help is blood from those who have had the disease and whose blood has a high titer. Recently we have been unable to get blood from patients who have been immunized against undulant fever.

By immunizing donors that are non-immune, we can get a very high titer of blood and this, second only to fever therapy, used as a blood transfusion, is the most satisfactory treatment.

We should use every means at our command for treating the fever. Fever therapy, transfusions from immune donors and from those who have had the disease—one or all of these—will give the best possible results. Vaccine therapy in the slow, chronic cases is of great help and we have used this with the idea of finally eliminating the disease.

The treatment may not give a great deal of results at first but must be persisted in until the patient is well. By nature, this is a very chronic disease and the treatment should be continued until the patient is entirely well.

PEPTIC ULCER

(O. H. Wangenstein, Minneapolis, in *Ill. Med. J.*, Aug.

Ulcer is the commonest cause of death in abdominal lesions, with the exceptions of cancer of the stomach and appendicitis. Throughout the life span, from birth to advanced years, patients may suffer, be incapacitated, or die from ulcer or one of its complications. Death from hemorrhage, and even perforation may recur several times and the infant, as well as the octogenarian. Obstruction, hemorrhage, and even perforation may recur several times during the life time of a patient with an ulcer.

The frequent ingestion of food is probably the most important single item in the control of gastric acidity. The selection of food is of lesser importance than frequent feeding. All the food, including water, may stimulate the secretion of acid.

Uncontrolled night secretion is the item over which effective management of ulcer breaks down. An alarm clock can be used to good purpose to lengthen the hours of control of acidity by frequent feedings. A physiologic dose of atropine at bedtime should prove helpful also.

Excerpt from a letter from patient John Bock: "Dear Doctor. I feel good. Thanks for not coming."

RADIOLOGY

EDITH MILLER, M.D., *Editor*, Petersburg, Va.

DIAPHRAGMATIC HERNIA

RELATIVELY little has been written about diaphragmatic hernia and its cardinal symptoms, and too little attention is usually given in clinical diagnosis and in diagnostic x-ray procedure to the possible presence of this condition.

One author states that its frequency varies as the diligence with which it is sought.

Dr. D. S. Beilin of Chicago, in a paper which was published in the *Journal of Radiology* in July, has very well classified the types of diaphragmatic hernia into congenital and acquired. Many of the congenital types no doubt are present throughout life, without symptoms and undiagnosed unless noted by chance in examinations for disease conditions elsewhere in the respiratory or gastrointestinal tract.

As Beilin states, the usual symptoms of diaphragmatic hernia are primarily due to the mechanical and irritative influence exerted by food or gaseous distention of the herniated portion of the stomach, with resultant pain and epigastric distress. The pain is not infrequently substernal and accompanied by shortness of breath and weakness; therefore, at times closely simulating a coronary disturbance. One of the distinguishing features in the history, however, is the appearance of pain on lying down and more or less relief on assuming an upright position.

Indigestion and eructation of gas after eating, frequently followed by either spontaneous or forceful vomiting, occur in many cases, the latter usually giving immediate relief. These symptoms might easily be confused with those of gallbladder disturbance.

Hematemesis is a usual symptom and frequently gives a misleading impression of gastric or duodenal ulcer.

Embryological maldevelopment and slight anomalies are ample explanation for the more frequent occurrence of the congenital type of herniation. These are separated into two groups; those with a congenitally shortened esophagus which, by retraction, draws the cardiac portion of the stomach through the esophageal hiatus. The other group is made up of true herniations of the cardia through a congenitally relaxed hiatus, with redundancy of the distal portion of the esophagus. These groups comprise about 80 per cent of all diaphragmatic hernias.

Traumatic hernia occurs secondarily to direct trauma or increased intraabdominal pressure and is usually suggested by the history; however, the en-

tity is often not kept in mind and may be misinterpreted.

Positive diagnosis can be made by x-ray examination; much too often it is made by direct surgical procedure. Preliminary x-ray study is desirable for evaluation of the extent and location of the lesion even though surgery may be anticipated.

In the discussion of Dr. Beilin's paper fluoroscopic examination, using a thick barium mixture with the patient in Trendelenburg position, was suggested. If, however, under direct observation the stomach is well filled or distended with a thin barium mixture, the patient placed in modified Trendelenburg position and asked to cough forcibly, the barium gravitates readily into the herniated portion of the viscus, or, if this is filled, slides through the hiatus. In this way an accurate visualization of the herniation is obtained.

A thick barium mixture is no doubt of advantage in differentiating a congenitally shortened esophagus, because of the better delineation of the mucosal folds of the stomach.

The treatment of diaphragmatic hernia is largely symptomatic. Frequently the patient is completely relieved by therapeutic procedure with instructions as to diet, avoidance of gastric distention and posture after eating. In severe cases, after the acute phase is relieved by esophageal intubation, lavage and dilatation of the cardiac opening of the stomach or such palliative therapy as is indicated, surgery with repair of the diaphragmatic opening is advisable.

STONE IN THE COMMON DUCT.—Pain was referred only to the left side in one case, to both sides with equal intensity in the other. In the latter case, distention of the common duct postoperatively produced pain on the left side only. Common-duct obstruction, therefore, may cause pain referred only to the left side and in the absence of other signs or symptoms suggesting disease in the biliary tract. It is not always necessary to assume the presence of pancreatitis or some other inflammatory process spreading to the left of the midline to explain left-side pain in disease of the biliary system.—*J. Fine & A. Starr*, Boston, in *New Eng. J. of Med.*, Aug. 28th.

THE INJECTION OF 10 MG. OF THIAMIN CHLORIDE (vitamin B₁) daily, plus the injection of 7 units of liver extract thrice weekly, has relieved 80% of cases of trigeminal neuralgia. The treatment may need to be continued for several months and the thiamin dosage increased to 100 mg. daily (rarely needed). The oral administration of vitamin B complex is of definite value.—*H. Borsook*, in *Jl. A. M. A.*, April 13th, 1940.

MANY PATIENTS with mild, chronic disorders can make a successful adjustment to life outside the hospital, after a period of treatment. The "boarding-out" system adopted by a number of public mental hospitals has released much needed beds and improved the status of the patients. Further developments in this direction may well be considered for civilian mental health.—*U. S. P. H. Reports*.

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EXAMINATION OF THE HEART

LAST year was published a booklet¹ on the clinical examination of the heart without the help of any instrument other than the stethoscope. The techniques of inspection, palpation, percussion and auscultation are used to determine the size of the heart, any abnormalities in the sounds or adventitious sounds (murmurs), any abnormality of rhythm. It is often much easier in a given case to be sure the heart is diseased, than it is in another case to be sure the heart is not diseased.

The size of the heart may be difficult to determine by any method, particularly in obese or very muscular subjects, and when the chest is emphysematous; but palpation and percussion still yield useful information. The left margin of the maximal apex impulse is the most accurate point for determination of the left border of the heart. The midclavicular line is a better landmark than either the nipple line or an arbitrary measurement from the midsternum. The apex is often in the fourth space in those under seven. The finding of an apex in the sixth interspace should make one suspect cardiac enlargement, though it may be found in a normal subject with a vertical heart.

Percussion for the left border of the heart should be carried mesially from the axilla to a point of definite dullness. Percussing toward the sternum in the fourth interspace, the first change in note as one nears the sternum should be considered as the right border of dullness. Two other percussion areas should be noted, the left border of dullness in the third space and the right border in the second space. In the normal heart, there should be no change in the percussion note in these areas until one reaches the sternum; if definite dullness is found in the third left space, it is suggestive of enlargement of the right ventricle, or pulmonary conus, rarely of the left auricle or its appendage. Dullness in the second and third right interspaces is suspicious of enlargement of the first portion of the aorta. Percussion of the great vessel dullness is of little use unless the vessels are much enlarged. Enlargement of the chambers other than the left ventricle, unless advanced, cannot be detected on physical examination. Study by röntgen methods is frequently necessary, as when one desires to know the size of the left auricle in suspected mitral valvular disease, or the width of the aorta when syphilitic aortitis is suspected.

Palpation is of importance in finding the maximal apex impulse and thrills over the aortic and pulmonary valve regions. Thrills, with murmurs

1. H. B. Sprague et al, Boston, in *Booklet Amer. Heart Assn.*, (1940)

which are themselves diagnostic, are of little importance. Such a thrill is the apical diastolic (presystolic) thrill occurring with the diastolic murmur of mitral stenosis. The continuous, often widespread thrill felt with patent ductus arteriosus, only confirms the evidence of the continuous murmur. Palpation will sometimes discover a slight extra apex thrust in diastole in gallop rhythm more readily than the ear may detect the sound. A forceful impulse to the left of the lower sternum, plus abnormal dullness over the lower end of the sternum, is evidence of right ventricular enlargement.

Alteration in the sounds natural to the sound heart are often as important as the appearance of abnormal sounds. Determination of the normal intensity of the first and second sound must be reached only after considering the thickness of the chest wall as affected by obesity, heavy musculature and breast tissue, and the modifying influence of emphysema. In the timing of all heart sounds and murmurs, the examiner listens first at the base of the heart to fix in his mind the place in the cardiac cycle of the sharp second sound. He then moves the stethoscope gradually toward the apex and retains the relation of this sound to other sounds and murmurs. There is slight delay between the first sound and the carotid pulse which makes timing difficult by this method if the heart rate is rapid.

Diminution of the intensity of the first heart sound at the apex in a chest of ordinary thickness suggests myocardial weakness. Accentuation or a sharp quality of the first sound should make one listen at the apex for the late diastolic murmur of mitral stenosis. Splitting of the first sound may be a physiologic occurrence, or be caused by the contraction of the ventricles not starting at exactly the same time, this due to bundle-branch block.

Accentuation of the aortic second sound occurs in hypertension, atheroma of the aorta and syphilitic aortitis. Accentuation of the pulmonary second sound is found when the pressure in the pulmonary circulation is increased (especially when the left ventricle fails or in the presence of mitral stenosis). Splitting of the second sound at the base of the heart is due to a slight difference in time of closure of the aortic and pulmonary valves. Reduplication of these sounds at the base suggests an increase in pressure in either the greater or the lesser circulation. The second aortic sound is often diminished or absent in aortic regurgitation. This, with a systolic murmur at the aortic area is important evidence of aortic stenosis.

In most children and in many older, particularly those with thin chests and active circulations, a third sound may be heard at the apex shortly after the second, of low pitch and intensity and best

heard by lightly applying the bell to the chest wall, with the subject in the supine or left-lateral position. It occurs at the time of rapid ventricular filling, and should be regarded with suspicion in persons of middle age or older. An accentuation of this sound, with a first sound of poor quality, is the most common mechanism in the production of pathological gallop rhythm. The gallop sound can frequently be intensified by accelerating the heart by exercise. This accentuated sound in diastole, with a third degree impulse which can be seen and felt in the region of the apex is evidence of ventricular dilatation. Attention to the time and character of the third sound in normal individuals, and its accentuation in gallop rhythm, is evidence of a skillful examination of the heart.

Starting at the base of the heart, the second sound can be placed with accuracy, and the timing of murmurs elsewhere can be decided by gradually moving the stethoscope toward the apex. *Only after listening at all the valve regions, with the naked ear and with both the bell and the diaphragm,* should one decide that no murmur is there.

The murmur to be heard over most hearts is systolic in the second interspace to the left of the sternum. Listen in this area first. This murmur may be transmitted to other parts of the precordium. It is usually normal, caused by the blood rushing into the distensible pulmonary artery which is close to the chest wall, particularly at expiration. This murmur will change considerably with change of position of the patient from upright to recumbent and will be decreased or removed by full inspiration. Such a murmur, as a solitary heart finding, is almost always of no importance.

Another extremely common systolic murmur heard over the precordium is the cardio-respiratory, due to air rushing into the lungs at the time when the heart contracts, or to displacement of air within the lung. It also varies with change of position and with respiratory phases. Have the patient breathe slowly and deeply. At some point in the cycle, the murmur will often disappear completely.

Systolic murmurs at the apex of the heart are not uncommon in young healthy persons. However, those unimportant are blowing, inconstant from day to day and in different positions, and not accompanied by heart enlargement. Acute infections or other ill health may produce such murmurs, probably by inducing slight cardiac dilatation and increasing the speed of the blood flow. Faint systolic murmurs can, at times, be heard in over-active normal hearts, variable in localization from one examination to another, sometimes localized to the left of the sternum, or to its lower portion. They are short, never harsh and may be mid-sys-

tolic. Apical, systolic murmurs of importance generally merge with the first heart sound and are rougher and more intense. They usually signify mitral valve deformity. Systolic murmurs over the pulmonary valve region, if attended by a thrill and cyanosis, are due in many cases to a congenital heart lesion. Such murmurs indicate x-ray and electrocardiographic study. Systolic murmurs over the aortic area usually mean dilatation of the aorta or stenosis of the aortic valve. In the latter case there is diminution or absence of the aortic second sound and usually a systolic thrill, felt best by palpating over the second and third right interspaces, above the clavicle, or in the suprasternal notch with the patient leaning forward at full expiration. A rare systolic, coarse murmur associated with a systolic thrill heard all over the heart, loudest in the third interspace, is caused by an interventricular septal defect.

Of the two diastolic murmurs of great importance, one is the low-pitched, rumbling, mid- and late-diastolic murmur of mitral stenosis, heard best at the apex with the bell, the patient in the supine or left-lateral position, often sharply localized. Careful auscultation of the entire apical region should be carried out before deciding this murmur is not being produced. Accentuation of the first sound should always make us suspicious of the production of this murmur. In the early stages of mitral valves narrowing, the murmur starts a short time after the second, and ceases shortly before the first, sound. In older patients, the murmur usually continues, with a presystolic accentuation, into a sharp first sound. The other is a blowing early diastolic murmur, usually heard best along the left sternal border directly after the second sound, by the unaided ear or with the aid of the diaphragm, usually best heard with the patient standing, leaning slightly forward, holding the breath in full expiration. When the aortic regurgitation is greater, as is common in syphilitic aortic valve disease, this murmur may be very loud and heard with the patient in any position and all over the chest.

The only important continuous murmur is that of patency of the ductus arteriosus. It is loudest over the second or third left interspace near the sternum, usually accompanied by a thrill. The systolic phase is louder but the murmur continues through the whole cardiac cycle with a blowing or harsh quality.

In some children a continuous humming murmur can be heard across the upper sternum due to the normal vibrations from the flow of blood in the great veins of the neck. The bell lightly applied over the clavicle, with the child's head turned away from that side, will reveal a louder continuous hum in these cases and will thus decide the origin of

the murmur heard distantly in the upper chest.

Heart rate and rhythm in normal persons often depart from regular beating and a rate of 70-80.

Tachycardia, simple acceleration of the heart rate, often occurs during examination of the nervous individual. It may be as fast as 160, slowing gradually as nervousness decreases, or when the person lies down. It often slows temporarily on forced expiration after a deep breath.

Bradycardia, low heart rate, even to 50 is not uncommon in healthy athletic persons. Increase of rate on exercise will prove that there is no heart block, as will speeding of the rate on inspiration and slowing on expiration.

Sinus arrhythmia, the usual finding in young persons and a common finding in those older, consists of a rhythmic increase in heart rate on inspiration and decrease on expiration. This relationship to breathing is diagnostic and can be demonstrated more obviously by slow forced respiration.

Premature beats (extrasystoles) is the momentary interruption of a regular heart rhythm, or one with the irregularity just described, by an early beat followed by a pause. In most instances this is of no importance. The diagnosis of the condition should always be made by auscultation of the heart and not by taking the pulse. Frequent recurrence of the premature beat indicates the need for electrocardiographic study, as this should arouse a suspicion of myocardial disease.

In auricular fibrillation the heart beat is continuously and completely irregular, it does not change its rate in relation to breathing. The heart should be listened to for at least a minute because periods of apparent regularity may occur. Auricular fibrillation always calls for further study of the patient.

Heart block is a rare arrhythmia, in its mildest form diagnosable on physical examination, characterized by sudden cessation of all cardiac sounds for the duration of at least one heart cycle. It must always be diagnosed at the heart and not at the wrist. It should not be confused with a faint premature beat followed by a pause. Electrocardiographic study may be needed to confirm. In complete block the heart rate is between 30 and 40 in most cases, rhythm regular, and normal acceleration on effort does not occur. Rates under 50 should be investigated electrocardiographically.

Other abnormal rhythms of the heart, usually characterized by continuous rate over 120, or by paroxysms of tachycardia, often require electrocardiographic interpretation.

Examination of the heart should always include physical examination. Much valuable information concerning the functional state of the heart can be obtained by attention to other organs. Thus it

CLASSIFICATION OF MURMURS

<i>Point of Maximal Intensity</i>	<i>Position in Cycle</i>	<i>Preferred Method of Auscultation</i>	<i>Character</i>	<i>Transmission</i>	<i>Assoc. With Thrill</i>	<i>Change of Heart Sounds</i>	<i>Relation to Respiration</i>	<i>Relation to Position</i>	<i>Diagnosis</i>
Important Systolic Murmurs									
Apical	Throughout Systole	Bell & Diaphragm	Harsh	Toward Axilla	Very Rare	1st sound often diminished or masked	Usually somewhat less intense with full inspiration	Little or no change	Mitral Regurgitation
Aortic	"	"	Often Loud	Toward Neck	Often Present	Aortic 2nd diminished or absent	"	"	Aortic Stenosis
Aortic	"	"	Blowing or Mod. Harsh	Vessels of Neck	0	Aortic 2nd often increased	Little change	"	Dilatation or Abnormality of Aorta
Rare Pulmonic	"	"	"	Heard widely over Lt. upper chest	Often Present	Pulmonic 2nd may be accentuated or diminished	Usually less intense with full inspiration	"	If associated with cyanosis and clubbing of fingers, Pulmonic stenosis
To the Left of Mid-sternum	"	"	Loud Very Harsh	"	Always Present	0	0	0	Interventricular Septal Defect
Unimportant Systolic Murmurs									
Lower Preordial or Apical	Early or Mid-systole	"	Blowing or Harsh	Localized	0	0	Variable, may disappear during inspiration	Variable and may disappear	Cardiorespiratory or unexplained
Pulmonic	Throughout Systole	"	Blowing or Mod. Harsh	May be heard over upper precordium	0	0	Less intense or disappears with inspiration	"	Physiological
Apical	Mid and late diastole	Bell	Low pitched & rumbling	Localized	Often Present	1st sound loud	Little change	Louder Recumbent	Mitral Stenosis
Left Sternal Border	Early or Mid-diastole	Diaphragm or Naked Ear	Blowing	Rt. & Lt. Sternal Borders & lower end of sternum	Very Rare	Aortic 2nd often Diminished	Loudest at full expiration	Loudest erect with patient leaning forward	Aortic Regurgitation
2nd or 3rd Lt. interspaces near sternum	Through Systole Diastole	Bell and Diaphragm	Harsh Loud in Systole	Over left lower chest	Systolic or Continuous	0	Little change	Little or No change	Patent ductus arteriosus

*Aortic insufficiency usually present as well.

**Unless replaced by systolic murmur.

should be an invariable procedure to listen for rales at the lung bases and to look for engorgement of the neck veins, enlargement of the liver, and evidences of edema. Careful determination of the blood pressure should also be routinely carried out, preferably in both arms. In addition, observation should be made of the peripheral vessels, and of the retinal vessels with the ophthalmoscope.

Finally, it must be recognized that severe organic heart disease may exist in the complete absence of any findings on physical examination. This is particularly true in coronary artery disease. Therefore, when a cardiac lesion is suspected and physical examination is inconclusive, further study with special techniques, such as fluoroscopy, x-ray examination and electrocardiography is advisable before a final decision is made as to the presence or absence of organic heart disease, and the type and severity of lesion present.

Here is a fair evaluation of the methods of diagnosis of heart conditions which every doctor has at hand at all times. It is clearly stated that the older, less complicated, diagnostic measures will yield sufficient information in most cases. It is just as clearly stated that certain findings demand the use of the more elaborate and expensive methods. This authoritative statement of the case will clear up much confusion.

THYMIC DEATH

(C. A. Hellwig, Wichita, in *Jl. Kansas Med. Soc.*, June)

What has been called an enlarged thymus is in reality the normal thymus of the well nourished individual.

There is no relation between the size of the thymus gland and sudden death. Thymic death from mechanical causes, except in malignant thymoma, seems to be extremely rare.

An internal secretion of the thymus has never been demonstrated. The experimental data concerning its function are not yet applicable to clinical medicine.

The term status thymico-lymphaticus may just as well be discarded.

There is no treatment of the thymus by injection of any extract, by radiation, or by extirpation, which would have any effect in preventing sudden death.

In most cases of sudden death, a complete autopsy including bacteriological and chemical studies will detect a more rational cause of death than an enlarged thymus.

BLEEDING.—In cases of dilatation, from whatever cause, in mitral or aortic lesions or distention of the right ventricle in emphysema, when signs of venous engorgement are marked and when there is orthopnoea with cyanosis, the abstraction of from 20 to 30 ounces of blood is indicated. This is the occasion in which timely venesection may save the patient's life. It is particularly helpful in the dilated heart of arteriosclerosis.—*Osler*.

NEO-CALGLUCON.—There are numerous reports of gratifying results from the injection in the vein of 10 c.c. of this chemical in poisoning by rhus, and by stings of insects, including the black widow.

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

IN MEMORIAM

1941

(To be continued in our Issue for October)

DOCTOR HARVEY PARK BARRET

DR. WILLIAM ALLAN, Charlotte

HARVEY PARK BARRET was born May 18th, 1885, at Anchorage, Kentucky. At sixteen he entered Centre College and was graduated from this institution with the B.A. degree in 1904. He received his M.D. degree from the University of Louisville in 1908 and for a few years taught there and also worked with the Kentucky State Health Department.

When the Charlotte Sanatorium asked the Rockefeller Institute for a pathologist, the request was forwarded to Dr. Barret. He came to Charlotte in 1911 to take charge of the clinical laboratories. His first task was to educate the local profession to the value of and necessity for clinical pathology, and very soon he began to train technicians who went to supervise laboratories in the hospitals which were rapidly being developed in the surrounding territory at that time. No more valuable and practical work in medical education has ever been done in North Carolina.

Dr. Barret's flair for original investigation early became manifest. He collected and identified the species of mosquitoes indigenous to Mecklenburg County, so when Camp Greene was established and Dr. Henry Carter of the Public Health Service was sent here for a malaria survey, Dr. Barret already had the necessary information.

He repeated Churchill's work, studying the growth-inhibiting effect of some 75 dyes on bacteria, but since Dr. Barret found the writing of articles for medical journals a matter of extreme difficulty, these observations were never published.

The study of intestinal protozoa early enlisted Dr. Barret's interest. At the time when Ashford was attributing to *Monilia psilosis* the causation of sprue, Dr. Barret examined 300 of Dr. Heath Nisbet's patients, finding this monilia in half of them. He then cultivated *Blastocystis*, showing that it was a vegetable and not a protozoan organism. This work gradually led to attempts to cultivate the parasitic intestinal protozoa—a goal sought after by medical men for fifty years. Using cold-blooded animals, a parasitic ameba from the turtle was for the first time successfully grown on artificial media and the ameba was named for

him—*Endamoeba barreti*. He next cultivated the majority of the intestinal protozoa in man.

Being dissatisfied with his cultures of *Endamoeba histolytica*, he delayed reporting the cultivation of this organism until after its cultivation was reported elsewhere. His work was promptly confirmed in this country and abroad, the English and French giving him credit for priority in this field, while some of his fellow-countrymen neglected to do so.

On one occasion he discovered that bacterial contamination of blood samples changed all the blood groups to Group 1 Moss (AB), and during the following year or so he isolated 15 bacteria possessing this property, one of them a pathogenic streptococcus. As so frequently happened, these observations were never published. However few men have spent as many nights in the laboratory searching for new knowledge, after the day's work was done, as Harvey Barret.

Dr. Barret was a member of the American Association of Pathologists and Bacteriologists, and of the American Society of Clinical Pathologists. Soon after the World War, he was offered the Chair of Bacteriology at Chapel Hill. At the time he was working on the diarrheas of infants and trying to develop typhoid immunization by the oral route, so he declined the offer, believing he could be more useful in the clinical field.

His interest outside of his profession lay in medical history, the collection of old and rare books, the collection of old pewter and glass, and the training of track teams at the local High School. He turned out championship track teams for a number of years and was invited to train the Davidson College team. In later years he took up the study of the minerals in North Carolina and learned more about, and accumulated a better collection of, the State's minerals than any other man in the State.

But no recitation of Dr. Barret's work and accomplishments would serve to portray the lovable character of the man; his custom of doing laboratory work gratis for every new doctor coming to town until he could establish himself; his shyness at being given any credit for his work (he left town to escape a testimonial dinner that was being planned in his honor); his insistence that he be called whenever a case of diabetic coma was brought into the hospital, so he could share the night-long vigil with the clinician; his readiness to go anywhere, any time, for blood counts; his unflinching giving of his time and means to civic causes, leading to his being designated by the Kiwanis Club as Charlotte's most useful citizen. Because of his unselfishness, honesty and simplicity, in a quiet way, he was the most popular man in the profession of our city.

In the death of Dr. Barret the Charlotte profession has lost its most gifted member.

In the Spring of 1911 he married Miss Nanny Mason, who survives with three daughters.

THIS Association's official journal's issue for May of last year carried this tribute to Dr. Tucker:

DOCTOR JOHN HILL TUCKER

DR. JAMES M. NORTHINGTON, Charlotte

Within the past month Charlotte and North Carolina lost one of their foremost personages. The twenty-second of April all Charlotte was saddened at learning that in the night before Dr. John Hill Tucker had died.

John Hill Tucker was born at Henderson. Son of a learned and distinguished doctor, he early chose to devote his life to medicine. But devoted as he was to medicine, he found time and energy for all other good things. After graduation in medicine at the University of Virginia and a few years of general practice in his native town, Dr. Tucker took special studies in diseases of the eye, ear and throat and removed to Charlotte. Here he entered joyously into the practice of his specialty, the work of the Episcopal Church and every other enterprise for the promotion of the private and public good.

A few years ago he was voted and proclaimed Charlotte's foremost citizen. Never was honor more deservedly bestowed.

And to the time he was stricken, five months before his death, he was healer and restorer, ministering to our needs, private and public.

With the passing of the weeks and months since those lines were penned has come fuller realization of their inadequacy.

A gentle, kindly, cultured man, ever eager to know more and more of his special field of medicine, of medicine as a whole, of knowledge as a whole; a man of unbounded energy, enthusiasm and courage, it was inevitable that he would take a high place in his profession and a leading part as a citizen.

DOCTOR JOHN PETER MUNROE

DR. J. M. NORTHINGTON, Charlotte

At Charlotte, in the night of October 14th, died, at the age of 83, the man who had done most in Medicine in North Carolina. Dr. Munroe did not initiate medical teaching in North Carolina; he did advance and improve it over a half-century. It may well be that none of those he turned out to minister medically made any great improvement on his teacher's teaching. Certain it is that this teaching was of the best for the day it was imparted, that those he taught carried healing wherever they were called.

Dr. Munroe, from his childhood, loved learning for learning's sake: much more he loved learning for the place it gave him among the elect: most he loved learning for what power of control it gave him over pain and sickness and death.

In the 1840's John Peter Mettauer, at Prince Edward Court House, in Virginia, was a whole medical faculty—and a good one: sixty-odd years later John Peter Munroe, at Davidson, in North Carolina, was a whole medical faculty—and a good one. And the total of medical knowledge to be taught had been increased a dozen fold in the interval.

No disparagement of the grandson of La Fayette's surgeon is implied, only the even greater accomplishment of our own John Peter.

Dr. Munroe made his own way. He worked with his hands for the wherewithal to train his mind, that he might work with his mind for the wherewithal to further train his mind and his hands for his great vocation of practitioner and teacher of medicine. Many a North Carolina-born doctor could say with truth, as did one of the most successful in the State a few years ago: "But for Dr. Munroe I could never have been a doctor." It would hardly be overstating the case to say that what Aycock and McIver did for general education in North Carolina, Munroe did for medical education. Some years ago another doctor, himself a great teacher of medicine, said of Dr. Munroe: "He has taught more subjects, and taught them all well, than any doctor who ever lived."

Omnivorous as was his craving for knowledge, catholic as was his learning, he had none of the priggishness of scholasticism. Learning of no practical usefulness to others he might chew as a pleasant cud; but learning he could translate into the promotion of the best earthly interest of mankind was his life-long quest. When any other man would have been content to pass the care of ailing humans on to younger and stronger frames, Dr. Munroe gets him off to Europe to learn, at first hand, from one who says he can do something for victims of general paralysis of the insane. He finds that, for many of these most pitiable and hitherto most hopeless of those made in His image, there is hope and cure; and he comes back to diffuse this hope, to make these cures. When his sparse remaining hairs were white, his legs tottering and his speech stumbling, his magnificent mind—still untouched, still bent on his life's purpose—forced him on and up; and he might have been seen, evening after evening, intently listening and industriously taking notes, as a peripatetic teacher of matters medical disserted on some new thing.

A few years ago the idea was born in Charlotte that the achievements of Dr. Munroe and Dr. Andrew Johnson Crowell should be accorded spe-

cial recognition while these two great doctors were yet with us. So a dinner was arranged and many came to pay the two heart tribute. Dr. Munroe was called upon, and his face glowed as he said that this celebration had made his cup of happiness full to overflowing.

Dr. Crowell has been some time gone from among us. Dr. Munroe's eager mind has now ceased its craving for, "More light." In honoring them we honored ourselves.

It would be ill-befitting that the ensample of our greatest man of medicine be suffered to lapse and go to naught. He would not have wished a likeness monument in bronze or marble to stare about and be stared at.

Fitting it would be to perpetuate the memory of this good doctor by raising funds to meet the expenses of the care of at least one illness, in each year, in each of the 100 counties of his state.

O, eloquent, just and mighty Death! Whom none could advise, thou hast persuaded; and all is covered over with these two narrow words, *Hic jacet!*

And they die

An equal death,—the idler and the man
Of mighty deeds.

DOCTOR JAMES WILSON HUNTER, JUNIOR

DR. C. J. ANDREWS, Norfolk

DR. JAMES WILSON HUNTER, JR., died at Hot Springs, Arkansas, May 11th, 1940, having been in ill health for some time. Dr. Hunter was a native of Norfolk and received his early education here under private tutorship. He was graduated from the Episcopal High School at Alexandria, received his Master of Arts degree and Doctor of Medicine degree at the University of Virginia, the latter in 1901.

He early interested himself in x-ray work and became a pioneer radiologist, which specialty he followed until his retirement at the close of last year. He was author of numerous articles in radiology.

He was a member of the Norfolk County Medical Society, of which he was past-president, and had been a member of the Medical Society of Virginia for thirty-eight years. He was also a member of the Tri-State Medical Association, the American College of Physicians, the American College of Radiology, the American Association for the Advancement of Science, The American Medical Association, The Seaboard Medical Association, the Society of the Sons of Cincinnati, the Alpha Omega Alpha Fraternity, the Huguenot Society of America and a veteran of the World War, a Captain in the Medical Corps.

Dr. Hunter's personality was that characteristic of a cultured gentleman. His work contributed much to the value of medical practice in this sec-

tion of the country. His accomplishments were such as anyone at the close of his life might be justly proud and the occasion of much satisfaction.

DOCTOR WILLIAM TURNER RAY

DR. O. HUNTER JONES, Charlotte

It was my privilege to know Dr. William Turner Ray from youth. In his passing I lost a classmate, of both high school and college days, and a friend.

Turner Ray was born at Wake Forest, N. C., January 17th, 1903. He grew up in this college town, attending the local public schools and later Wake Forest College, where he was graduated with the B.S. degree. He received his M.D. degree from the University of Maryland in 1934, interned at the Baltimore City Hospital and the Franklin Square Hospital in Baltimore, following which he located in Charlotte for the general practice of medicine. Here he was city police physician for three years. He was a member of the Mecklenburg County Medical Society, the North Carolina Medical Society, the Tri-State Medical Association, and the American Medical Association.

In addition to his professional duties, Dr. Ray was keenly interested in the alumni activities of Wake Forest College and was secretary of the Mecklenburg Chapter at the time of his death.

He is survived by his wife, who was formerly Miss Harriette Mangum, of Wake Forest, and an infant son, William Turner Ray, Jr.

To know Dr. Ray was to like him. He possessed that very fine quality of cheerfulness and of spreading cheer. He enjoyed living to the fullest. It is tragic indeed that one who loved life so should have been stricken at the early age of 37. Medically, his distinguishing quality was a primary concern for the welfare of his patients. He never failed to seek consultation whenever there was even the slightest possibility that the patient might benefit therefrom—such is the mark of the true physician! Dr. Ray was honest with himself and honest with his patients, and in turn experienced that inner satisfaction known only to the physician who enjoys the complete confidence and trust and gratitude of his patients.

Dr. Ray passed away suddenly, June 16th, 1940, presumably a victim of coronary heart disease. In the five years he spent among us this promising young physician had made a host of friends. He will be greatly missed, and his place difficult to fill.

DEATH

(A sonnet written by Dr. Hans Zussner when he knew his days were numbered; *Jl. Assn. Amer. Med. Col.*, July)

Now is death merciful. He calls me hence
Gently, with friendly soothing of my fears
Of ugly age and feeble impotence
And cruel disintegration of slow years.

He does not leap upon me unaware
Like some wild beast that hungers for its prey,
But gives me kindly warning to prepare,
Before I go, to kiss your tears away.

How sweet the summer! And the autumn shone
Late warmth within our hearts as in the sky,
Ripening rich harvest that our love had sown.
How good that 'ere the winter comes, I die!

Then ageless, in your heart I'll come to rest
Serene and proud, as when you loved me best.



NEWS

THE SCHERING AWARD

The Schering Award is offered to encourage the current interest in endocrinological developments by offering an opportunity to interested medical students to pursue an inquiry into that branch of the history of endocrine research which may appeal to them. No restriction is placed upon the historical, philosophical or scientific depth which an author may permit himself.

A medical student matriculated in any medical school in the United States or Canada is eligible to compete. Graduate students in medical schools are not eligible. Senior medical students are eligible with the understanding that they will be awarded, if successful, an equivalent scholarship for postgraduate study or the cash equivalent of the scholarship, at the option of the medical student.

All manuscripts become the property of the *Journal of the Association of Medical Students* when submitted. Acknowledgment will be made of every manuscript received, but no other responsibility can be assumed; entrants are advised to prepare and retain duplicate copies as a safeguard against the possibility of loss.

Manuscripts will be received up to November 15th, next. Offerings will be judged by a committee of distinguished endocrinologists and authorities in related fields of medicine and chemistry. The committee includes: Dr. E. C. Hamblen, Duke University School of Medicine; Dr. R. G. Hoskins, Harvard Medical School; Dr. F. C. Koch, University of Chicago; Dr. H. Lissner, University of California Medical School; Dr. E. P. McCullach, Cleveland Clinic; Dr. C. R. Moore, University of Chicago; Dr. E. Novak, University of Maryland; Dr. E. L. Sevringhaus, University of Wisconsin Medical School; Dr. E. Shorr, Cornell University Medical College.

The names of successful candidates for the award will be announced in December, 1941, when the prizes will be awarded.

Notice should be furnished at such time as the student decides to prepare a manuscript, and should state the field selected for his dissertation, his medical school year, age and home address.

Manuscripts, notices of intention to participate, and other communications, should be addressed to

Committee on the Schering Award, Association of Medical Students,

25 Madison Square North,
New York City.

ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held at Atlanta, June 1st, 2nd and 3rd, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a type-written, double spaced copy sent to the Corresponding Secretary, Dr. T. C. Davison, 478 Peachtree Street, Atlanta, not later than April 1st.

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any journal selected by the author.

DR. BERRYHILL MADE DEAN

Walter Reece Berryhill was born in Charlotte in 1900, and graduated from the University in 1921. He was president of his class in his senior year and president of the student council. In 1923 he entered the Medical School of the University, and went on to Harvard for his M.D. degree.

He served, successively, as intern and resident physician in the Boston City Hospital, as resident physician at the Lakeside Hospital in Cleveland, and as instructor in medicine and attending physician at the Lakeside Hospital. After he had been University physician at Chapel Hill for a year he was elected associate professor of medicine, and in 1937 he became assistant dean of the Medical School. He is now elevated to the deanship.

DR. HAL MCCLUNEY DAVISON, DR. JAMES C. THOROUGHMAN and DR. JOHN B. PESCHAU announce their association for the practice of Medicine (Internal Medicine, Allergy), 207 Doctors Building, Atlanta.

DR. JAMES P. BAKER, Richmond, announces the removal of his offices to 820 West Franklin Street.

WHITMAN CARLISLE MCCONNELL, M.D., announces that his son, WHITMAN HURST MCCONNELL, M.D., has joined him for the practice of Neuro-psychiatry at St. Petersburg, Florida.

DR. ROBERT L. GARRARD, Assistant Physician to the State Hospital at Morganton for the past fourteen months, has removed to Greensboro for private practice in mental and nervous disorders. He is a native of Alabama, graduated from Harvard Medical School in 1932 and spent several years in hospitals of Boston, Providence and New York. Dr. Garrard is to be affiliated with the Duke Hospital and Medical School in Durham.

DR. J. P. KING and DR. F. A. STRICKLER announce the association of DR. WILEY D. LEWIS with offices at Saint Albans Sanatorium, Radford, Virginia. Practice limited to Neurology and Psychiatry.

DR. W. GAYLE CRUTCHFIELD announces the removal of his offices from Richmond to *The University of Virginia Hospital*, Charlottesville, where he is in charge of the *Department of Neurological Surgery*.

MARRIED

Dr. Marshall Burt Breath, of Galveston, Texas, and Miss Kathleen Douglas MacDonald, of Farmville, Virginia, were married on August 30th.

Dr. Rufus Henry Temple and Miss Eleanor Frances Worthington, both of Kinston, were married on September 2nd.

Dr. Alfred Hamilton, of Chapel Hill, and Miss Eileen O'Brien, of Providence, Rhode Island, were married at Chapel Hill, September 4th. Dr. Hamilton, a lieutenant in the Medical Corps, United States Army, is stationed at Camp Blanding, Florida.

Dr. Adlai Stevenson Oliver, Jr., of Raleigh, and Miss Mary Anderson, of New Bern, were married on September 6th. Dr. Oliver is resident physician in the Bryn Mawr Hospital.

Miss Kathryn Elizabeth Funk, of Middletown, and Doctor Theodore Baldwin McCord, of Fairfax, Virginia, July 19th.

DIED

Dr. William H. Riley, 81, of Battle Creek, Mich., died August 24th, after a two weeks' illness at The Lodge, Amelia County home of his son. Dr. Riley was graduated from the University of Michigan in 1886, and except for the years 1896 to 1902, his medical career had been with the Battle Creek institution.

After his graduation Dr. Riley studied in New York City, at Chicago, Vienna, Munich and London. He became a member of the Royal Society of Medicine of London. He was the author of various articles in leading medical journals dealing especially with diagnosis of brain and spinal cord tumors and pernicious anemia.

TO MINIMIZE AFTER-EFFECTS OF TONSIL REMOVAL

(R. H. Fowler, M.D., New York, in *J. A. M. A.*, Aug. 2nd)

It takes but a minute to cut a flap at the time of the first incision of the mucous membrane; it takes less than a minute when the tonsil has been removed to anchor this flap with a catgut slipknot to the fascia at the center of the wound. The technic must be accurate. The patient eats breakfast the next morning. The time for the wound to cover over is lessened by half, and the amount of scarring is almost nil. Covering the most vulnerable and sensitive part of the wound quickens the healing forces of nature to repair the throat with a minimum of discomfort, distortion and disturbance of function. . . .

The number of operations in which plastic flaps have been used has run into the thousands. No bad results have been reported.

BOOKS



ABDOMINAL SURGERY OF INFANCY AND CHILDHOOD, by WILLIAM E. LADD, M.D., F.A.C.S., William E. Ladd Professor of Child Surgery at Harvard Medical School; Chief of Surgical Service, The Children's Hospital, Boston; and ROBERT E. GROSS, M.D., Associate in Surgery, the Harvard Medical School; Associate Visiting Surgeon, The Children's Hospital; Associate in Surgery, The Peter Bent Brigham Hospital, Boston. 455 pages with 268 illustrations. Philadelphia and London. *W. B. Saunders Company*. 1941. Price \$10.00.

The need for a book dealing with surgery of infancy and childhood as an art in many ways different from surgery of the adult has been felt for a long time. Here is the answer to that need, complete and authoritative, all the way from congenital pyloric stenosis to neuroblastoma sympathetico.

ESSENTIALS OF GENERAL SURGERY, by WALLACE P. RITCHIE, M.D., Clinical Assistant Professor, Department of Surgery, University of Minnesota Medical School; with 237 illustrations. *The C. V. Mosby Company*, 3525 Pine Boulevard, St. Louis. 1941. \$8.50.

This volume is presented as a basic outline of the important surgical points which the student of

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ALLONAL, SENSIBLE HYPNO-ANALGESIC

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medicine must master. Some chapters have been written by other members of the faculty of the University of Minnesota Medical School.

A brief history is given of the development of surgery. Chapters are devoted to anesthesia, technique, asepsis and antisepsis, wounds and their repair, mechanical and thermal injuries, hemorrhage and shock, gangrene and peripheral vascular disease, inflammation and infection, tumors, the skin, the lymphatic system, the blood vessels, the peripheral nerves, orthopedic surgery, fractures and dislocations, amputations, tissue transfer and transplantation, the head, brain and meninges, the oral cavity, the neck, the endocrine glands, the breast, the chest wall, pleura and lungs, the heart and pericardium, the esophagus, larynx, and trachea, the spinal cord, autonomic nervous system, the abdominal wall and hernia, the peritoneum, the stomach and duodenum, the small and large bowel, the biliary system, the pancreas, surgery of the spleen, an outline of urology.

Throughout the description is clear, the teaching sound, devoid of fads and fancies. The quarter-thousand illustrations so amplify the text as to make a book of unusual excellence.

THE COMPLETE WEIGHT REDUCER, by C. J. GERLING. *Harvest House*, 70 Fifth Ave., New York City. 1941. \$3.00.

This seems to be a book in which the different elements that account for fatness are given their proper values; *i.e.*, in which eating too much is given chief place. Lack of exercise is given a well-deserved second place.

The various fads advertised so generally are analyzed and shown up. "Acidosis" is intelligently discussed. So is alcohol, and appetite. Those who belong to oversize fat families are warned that it may be dangerous to try to get thin.

Function and malfunction of the endocrine glands, in their bearings on the laying down of fat, are amply considered.

The sanity and balance of the author are shown by this passage: Many a housewife will spend money on an expensive rowing machine and then hire someone to do all the housework. Housework involves all the movements necessary for reduction, besides saving money.

No one capable of thinking in those terms could write a foolish book.

FATAL PARTNERS WAR AND DISEASE, by RALPH H. MAJOR, M.D. *Doubleday, Doran & Co., Inc.*, Garden City, N. Y., 1941. \$3.50.

Warfare in early times was simple. Individual courage, many times multiplied, was the deciding factor. A club, a spear or a crude sword, was the

whole offensive equipment, a pouch of parched grain the commissary.

The Greek word *surgeon* means *extractor of arrows*. Plagues of disease were regarded as visitations of Divine wrath. The crusaders are shown to have been marauding, ignorant fanatics. The record of the Hospitallers is a bright light in a very dark world. Women, as a part of the military establishments, make remarkable reading. The American origin of syphilis is espoused.

There are sketches of most of the great wars—the 30-years War, the Napoleonic Wars, the Civil War, the Crimean War, the South African War, all the way to and including the First World War—all emphasizing the well-known fact that up to the Russo-Japanese War ten to fifty died of disease for every one to meet death in battle.

It is an entertaining and instructive narrative which should meet with a favorable reception from doctors, nurses and all other intelligent persons.

HANDBOOK OF COMMUNICABLE DISEASES, by FRANKLIN H. TOP, A.B., M.D., M.P.H., Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health; Associate Professor of Preventive Medicine and Public Health, Wayne University College of Medicine; and Collaborators.



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With 73 text illustrations and 10 color plates. *The C. V. Mosby Company, St. Louis. 1941. \$7.50.*

There is still confusion as to what are *infectious* and *contagious*. There can be none as to the meaning of *communicable*. The classification by portals of entry is original and useful. The book is a product largely of the author's own experience and that of an associate. It brings the doctor right up to now in knowledge of how to recognize, and what to do about, diseases which may be communicated from the sick to the well.

CARDIAC CLINICS: A Mayo Clinic Monograph, by FREDERICK A. WILLIUS, B.S., M.D., M.S., in Med., Head of Section of Cardiology, Mayo Clinic and Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester. Illustrated. *The C. V. Mosby Company, St. Louis. 1941. \$4.00.*

These are brief, practical discussions of heart conditions, compiled and arranged from cases presented from time to time in Staff meetings of the Mayo Clinic, largely for the general practitioners, who, as the author says, are usually accorded little consideration by medical authors.

Here is teaching fit to be ranked with Sir Thomas Lewis's *Diseases of the Heart*.

SYNOPSIS OF APPLIED PATHOLOGICAL CHEMISTRY, by JEROME E. ANDES, M.S., Ph.D., M.D., F.A.C.P., Director of Department of Health and Medical Advisor, University of Arizona, Tucson; Formerly Assistant Professor of Pathology and Clinical Pathology, West Virginia University Medical School; and A. G. EATON, B.S., M.A., Ph.D., Assistant Professor of Physiology, Louisiana State University School of Medicine, New Orleans. With 23 illustrations. *The C. V. Mosby Company, St. Louis. 1941. \$4.00.*

The authors start out to write a simple, useful text on the application of the chemistry of disease conditions to the diagnosis and cure of disease, and right well do they do the job.

The text is concise; there is no superfluity. For those who wish encyclopedic information abundant references are furnished.

MICROBES WHICH HELP OR DESTROY US, by PAUL W. ALLEN, Ph.D., Professor of Bacteriology and Head of the Department, University of Tennessee; D. FRANK HOLTMAN, Ph.D., Associate Professor of Bacteriology, University of Tennessee, and LOUISE ALLEN McBEE, M.S., Formerly Assistant in Bacteriology, University of Tennessee. With 102 text illustrations and 13 color plates. *The C. V. Mosby Company, 3525 Pine Boulevard, St. Louis. 1941. \$3.50.*

Chapter heads are Microbes and the Age of Science, The Age of Superstition, What Are Microbes? Smallpox, Nicolas Appert, Making the World Microbe Conscious, Surgeons and Microbes, The Use of Disinfectants and Antiseptics, Infection and Resistance, Community Health Activities.

A chapter is given each important infectious dis-

ease, one to food poisoning, one to food preservation, one to safe drinking water, leaven in bread, milk and its products, vinegar-making, disposal of waste and some friendly microbes attract the interest.

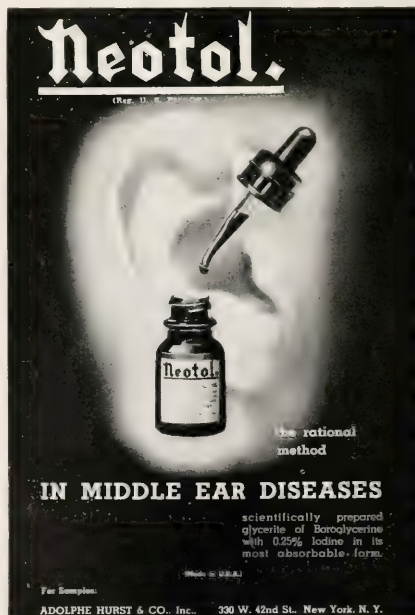
A need has been felt for a long time for a book inculcating a sane, differentiating attitude toward microorganisms and snakes, according as individual specimens are harmful, harmless or helpful. Here is the answer to the need as to microorganisms. Now, who will supply a like book on snakes?

PROGNOSIS IN VALVULAR DISEASE.—The question is entirely one of efficient compensation. So long as this is maintained the patient may suffer no inconvenience, and even with the most serious forms of valve lesion the function of the heart may be little, if at all, disturbed.

Practitioners who are not adepts in auscultation and feel unable to estimate the value of the various heart murmurs should remember that the *best judgment of the conditions may be gathered from inspection and palpation. With an apex beat in the normal situation and regular in rhythm the auscultatory phenomena may be practically disregarded.*

A murmur *per se* is of little or no moment in determining the prognosis in any given case. There is a large group of patients who present no other symptoms than a systolic murmur heard over the body of the heart, or over the apex, in whom the left ventricle is not hypertrophied, the heart rhythm is normal, and who may not have had rheumatism.

Indeed, the condition is accidentally discovered, often during examination for life insurance.—Osler.



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THE SPREAD OF DISEASE . . . AND RELIGIOUS FREEDOM

(Editorial in *Jl Med. Soc. N. J.*, July)

With the spurious justification of "religious freedom", New Jersey may soon be encouraging the spread of communicable disease. Such, at least, will be the State's claim to fame if the emasculated version of Assembly Bill 402 is finally enacted into law. In its original form this Bill, introduced by Mr. Hargrave, would allow no-one but physicians to treat venereal disease. The Christian Scientists succeeded in slipping an amendment into the bill which would exempt them from this restriction, thus allowing them to "treat" syphilis and gonorrhea! Only Senator Summerill of Salem voted against this amendment. The bill is now back in the Assembly, and it may be necessary for the friends of public health to withdraw A-402 entirely rather than see it enacted in its present vicious form.

The theory that religious freedom justifies faith healing in venereal disease is utterly false. Syphilis and gonorrhea are communicable diseases, and thus their control is a public health problem, not one of private religious opinion. Second, it must be understood that the precious American right to worship according to one's own conscience can not be perverted to a permission to jeopardize public safety. To take an extreme but pertinent example, could the State allow a religious cult which prescribed assassination of non-believers to flourish? Could murderers be given immunity in such a case, because their crimes were dictates of their religion? The question answers itself. Yet it is not too strong to say that the faith-healers will become public menaces if this amendment is enacted into law. Carriers of syphilis or gonorrhea who do not want to submit to medical care, will be allowed to spread their infection freely while undergoing the mumbojumbo of a cult "cure".

The incredible success of this weird amendment can be explained only on the assumption that our Senators simply did not understand the implications of their approval. They should somehow be enlightened before New Jersey becomes an object of nation-wide derision by the enactment of the Christian Science Amendment to the Venereal Disease law.

PERMISSION NECROPSY

(O. T. Schultz, Evanston, Ill., in *Jl. of Med.*, Aug.)

Only by continued postmortem studies can new disease entities be discovered and older observations be confirmed, elaborated, and established as fact.

Only by following the carefully-studied patient to the autopsy table can one determine where and why an error in diagnosis was made or why something may have been overlooked.

In some of the better hospitals tabulations have been made of the degree of agreement between clinical diagnosis and anatomic diagnosis. The percentage of error is highest in minor lesions that may have been overshadowed by a predominant condition.

Not one death in a hundred is subjected to postmortem examination in the country at large. The cause of death as listed on a death certificate is therefore incorrect in a variable and not insignificant percentage. The value of vital statistics will be increased in proportion to the decrease in the factor of error in reported causes of death.

Early and small cancers not recognized before death are found in a considerable proportion of deaths coming to autopsy.

Heredity is an important factor in disease; to what extent cannot be determined until the family history of disease in the ancestry of the individual is better known.

CHUCKLES

Kirkham Brewer, during prohibition days, was in the front rank of bootleggers and amassed a fortune. He still hopes that prohibition will once more tighten its coils around American necks. He was admitted to the ward, a pauper, with extreme venous stasis, due to constrictive pericarditis. As we were discussing his case on morning rounds he beckoned to me, "Did you tell those guys who I am?" he asked. I told him they wouldn't know if I did. He stared at me in utter amazement. "Where were they all this time? In Africa? Mean to tell me they never heard of Kirky Brewer?" Suddenly he sat up with a start. "I ain't no has-been;" he shouted, "get this straight, I'll . . ." He sank back on the pillows, exhausted and cyanosed. "Kirky Brewer a has-been," he kept on muttering feebly.

The dismissal of John Holywood's secretary cured his wife's digestive disturbance.

The sterility of Mrs. Hobbs was found to be due to dietary deficiency.

The first case of gonorrheal bursitis seen in the clinic in a year was in the person of Christian Scientist Hall Burke. Error of the mind.

—Leaf from a Doctor's Diary, *Roche Review*.

ALCOHOLIC NEURITIS APPARENTLY NOT DUE TO DEFICIENCY OF VITAMIN B₁

(Editorial in *Amer. Jl. Dig. Dis.*, Sept.)

A few years ago most enlightened physicians were much impressed by the statement that neuritis associated with chronic alcoholism was due not so much to the alcohol as to the alcoholic's tendency to go without food and thus to get a Vitamin B₁ deficiency. The theory, then, was that in order to cure alcoholic polyneuritis, all one had to do was to administer much Vitamin B.

Now comes a report of 238 cases of alcoholic neuritis treated through the years which showed nothing to indicate that the forcing on these patients of yeast extract Vitamin B₁ or liver extract shortened the period of convalescence. The average length of stay in the hospitals of the patients who were treated before 1929, without vitamins, was compared with the stay of those who were treated after 1929, with vitamins. The results showed that the average length of stay was about the same in both groups.

TO RESTORE CHARRED DOCUMENTS.—Treating the document with a 25 per cent solution of chloral hydrate in alcohol, repeating several times, the document being dried at 60° C. between each application, until a mass of chloral hydrate crystals forms on the surface. At this stage, a similar solution, to which 10 per cent of glycerine has been added, is applied and the document dried as before. It may then be photographed; the most suitable type of plate being a contrasty non-color sensitive one.

The method has proven equally satisfactory for type-written and printed material. With certain modifications it has also been found to restore writing.

CHRONIC SINUSITIS may be divided into the pure infectious type and the allergic rhinitis with sinusitis. Chronic nasal and sinus disease has an allergic basis in the majority of cases. Treatment of the infection by irrigations and operations may result in improvement but will often fail to give a permanent cure. Treatment of both the allergy and the infection will give the best results.—*Shambaugh*.

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A rich decorative treatment has been designated for all units of *THE SOUTHERNER* the basic colors being blue, green and beige in light, medium and dark tones. Blue and beige are distributed in straight chair car planning, each car carrying out variations of the same color treatment throughout. Partition chair cars emphasize beige and the Baggage-Dormitory-Chair Cars are done in tones of blue. Green is the predominating scheme in dining car and Lounge-Tavern-Observation units.

The whole scene is enriched with an attractive arrangement of photo-murals which have been especially planned to heighten the atmosphere of luxury and beauty in *THE SOUTHERNER*.

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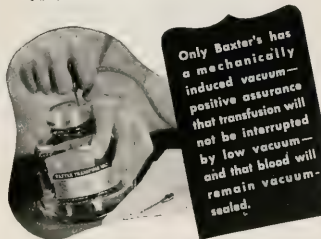
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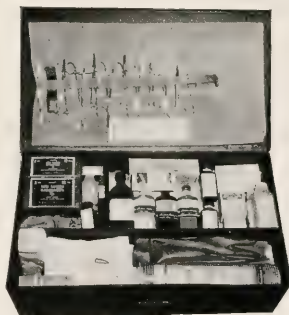
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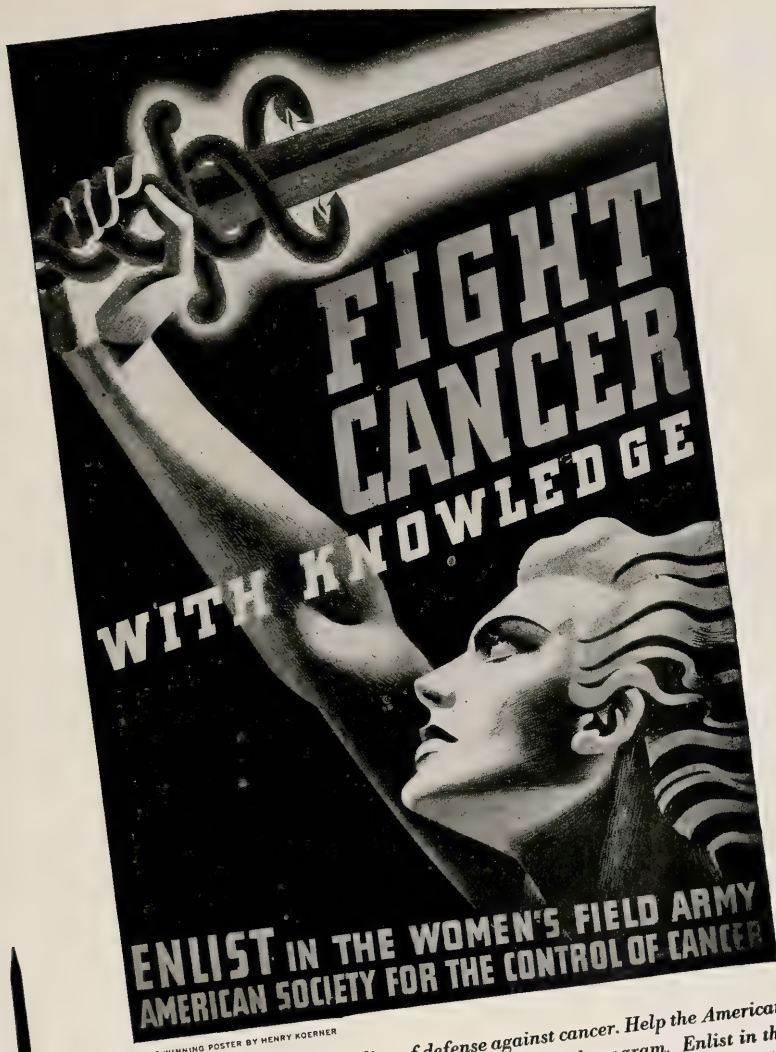
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JAMES M. NORTHINGTON, M.D., Editor

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No. 10

Cardiovascular Emergencies*

TINSLEY R. HARRISON, M.D., Winston-Salem

From the Department of Internal Medicine Bowman Gray School of Medicine of Wake Forest College

THE PURPOSE of the discussion to follow is to deal with some of the important aspects of the more common cardiovascular emergencies. No attempt will be made to discuss any condition in detail, but interest will be centered on certain practical points in the diagnosis and treatment of these conditions.

Probably the most common cardiovascular emergency is an attack of angina pectoris. A great deal of confusion has long existed in regard to the diagnosis of this illness, which may exist even in severe form, with no objective abnormalities on physical examination, and even with little or no change in the electrocardiogram. However, difficulties in diagnosis can usually be overcome by remembering that any pain in the neck, arm, chest or even the upper abdomen, which comes on with exertion and is relieved within a few minutes by rest, is in all probability angina pectoris. In the treatment of this condition I would like to emphasize one point only. It has been commonly believed that the nitrites have such a short action as to make them valuable only in the treatment of the pain and practically useless in its prevention. In recent years new work has shown that this point of view is untenable and it is indicated that nitrites and allied drugs are also of value in preventing the pain. Most patients with angina pectoris can be kept free from severe attacks for weeks at a time by having them take 1/200th to 1/400th grain of

nitroglycerine under the tongue every two to every three hours. When, as is often the case, the disease is mild, such frequent administration need not be carried out, but the patient should be instructed to utilize nitroglycerine before any unusual physical or mental strain. Nitroglycerine is one of the few powerful drugs which is almost harmless and patients may take several tablets per day for a period of years without developing any toxic symptoms or without developing intolerance to the drug.

Another common cardiovascular emergency is acute edema of the lungs. This occurs in patients who have some type of heart disease, usually hypertension, arteriosclerosis or deformity of the aortic valve, which puts a predominant strain on the left ventricle. The attacks usually come on in the middle of the night and may waken the patient from sound sleep. The seizures are attended by increasing dyspnea and the rapid development of moist rales in the lungs. In the prevention of such attacks, digitalis is practically specific. For the treatment of the attacks the methods of choice are morphine used freely, and venesection. In case the patient does not respond immediately, an oxygen tent should be employed to prevent death from asphyxia while further treatment is being instituted. Many patients who have recurrent attacks are benefited by the frequent administration of diuretic drugs. This form of treatment is still limited by many physicians to persons who have

*Delivered before the Piedmont Postgraduate Clinical Assembly at Anderson, S. C., Sept. 10th, 1941.

edema of the legs. However, it should be pointed out that edema in this location is much less serious than edema of the lungs, and that the latter responds equally well to diuretic measures.

Another group of cardiovascular emergencies is of those which arise in association with disturbances of the rhythm of the heart. A sudden marked change in rate in either direction may induce grave symptoms. Perhaps the most common of such conditions is auricular fibrillation, which can be recognized by the fact that it is almost the only condition which causes the heart to beat both rapidly and irregularly. In the treatment the physician is faced with two alternatives. On the one hand, he can try to abolish the arrhythmia completely. For this purpose, quinidine is the only drug to use, in doses of $1\frac{1}{2}$ to $7\frac{1}{2}$ grains every few hours until the rhythm suddenly becomes regular. The dose should then be gradually diminished and finally omitted altogether. Quinidine is the drug of choice in patients who have not had cardiac decompensation in the past, and who have auricular fibrillation which has lasted only a few hours or a few days. The drug is contraindicated when the patient has or has had congestive heart failure, when the auricular fibrillation is of long duration and in patients who have well marked disturbance of conduction, as shown in the electrocardiogram. In the latter instances the drug may be dangerous. Hence, the physician should, as a rule, have an electrocardiogram made before employing quinidine.

The other method of treating auricular fibrillation consists in giving digitalis, which slows the heart but does not cause it to become regular, in fact it favors the persistence of the auricular fibrillation with increases in the degree of block between the auricles and the ventricles, so that the latter beat at a much slower rate. This is the method of choice in treating patients with long-standing heart disease who have had symptoms of cardiac decompensation in the past. It is also the method of choice in treating any patient with auricular fibrillation of long duration. Ordinarily, one administers about 15 cat units in the first two or three days and follows this with one to two cat units daily as a maintenance dose. Except in rather rare instances the patient who has once needed digitalis should continue to take it indefinitely.

Another condition which may constitute a cardiovascular emergency is paroxysmal auricular tachycardia. This is particularly common in healthy young persons who have no evidence of organic heart disease. The heart rate suddenly changes from the normal to a rate of 170 or more. The seizure lasts for a few minutes or a few hours or, much more rarely, for several days. Under the

latter circumstances the circulatory collapse may set in, even though the patient has a structurally normal heart. The diagnosis of this condition can usually be made accurately by the history of tachycardia setting in instantly in a person without serious heart disease. The treatment consists of vagal stimulation of one type or another. A method which is effective in more than three-fourths of the patients is pressure on first one and then the other, and then both, carotid arteries just at the highest point in the neck at which the pulsation can be felt. The pressure must be rather firm and it is well to massage the artery by moving the fingers slightly while the pressure is kept up. Another procedure which often causes the attacks to cease abruptly is pressure on the eyeballs. The compression must be sufficiently firm to cause slight pain. In stubborn instances of this disease the attacks may sometimes be terminated by a combination of two or more of the following procedures:

- (a) Holding the breath in deep inspiration
- (b) Attempting expiration with a closed glottis
- (c) The induction of gagging
- (d) Any procedure which causes vomiting, such as the use of ipecac, or
- (e) By a dose of morphine large enough to put the patient to sleep.

Attacks of paroxysmal auricular tachycardia are best prevented by the administration of digitalis, one to one and a half cat units per day.

A much rarer form of tachycardia is that in which the irritable focus is in the ventricle—paroxysmal ventricular tachycardia. This usually occurs in persons with advanced heart disease, particularly of the coronary type. It may be induced by digitalis and it occurs occasionally in otherwise healthy individuals. The diagnosis of ventricular tachycardia at the bedside is sometimes difficult. Among the points which are helpful are these: the rate is usually between 130 and 180, the rhythm is quite regular but the loudness of the first sound varies somewhat from beat to beat. Some of the patients display an occasional sudden large venous pulsation in the neck (it tends to occur when the auricles and ventricles contract at the same time). In case the physician suspects ventricular tachycardia but is uncertain of the diagnosis it is wise to have an electrocardiogram made immediately. The condition is much more serious than the other types of tachycardia which have been discussed. Digitalis may do harm by intensifying the attack and favoring the induction of fatal ventricular fibrillation. On the other hand, quinidine is practically specific both in the treatment and the prevention of the attacks. The drug may have to be

given in very large doses and occasionally may need to be administered intravenously.

A fourth type of paroxysmal rapid action of the heart is auricular flutter. This condition is closely allied to auricular fibrillation and is usually a transition state between the latter and normal rhythm. It is very difficult and often impossible to diagnose it at the bedside. The treatment is essentially the same as that of auricular fibrillation.

All of these various forms of rapid heart action may be differentiated from the ordinary tachycardia shown by many ill patients by the fact that these ectopic or paroxysmal tachycardias are of sudden onset, the heart rate changing abruptly from the normal to the rapid rate. The offset is likewise apt to be abrupt, but the patient frequently does not remember this because he is frightened during the attack and does not recall the events which occur toward its end.

The sudden bradycardias likewise often are responsible for cardiac emergencies. Many healthy persons have, when at rest, a heart rate of about 55. Occasionally a vagotonic athletic young man may even have a resting heart rate of only 40. However, on exercise such persons develop a gradual acceleration of the rate. The situation is quite otherwise in persons with the Adams-Stokes syndrome, or complete heart block. Here the rate is usually 45 or less, commonly less than 40, and it is affected either very little or, more commonly, not at all by exercise. This point alone will usually suffice to allow the physician to recognize the bradycardia of true heart block. Other points which may be of value are the variations in the intensity of the first sound, in spite of the fact that the rhythm is perfectly regular, and the occasional appearance of a marked pulsation of the jugular vein at a time when the auricles and ventricles happen to contract together. In the treatment of the acute attacks which may be associated, of course, with fainting spells and convulsions, the method of choice is the administration of minimal amounts of epinephrine at frequent intervals. One usually starts by injecting one minim and, keeping the hypodermic needle under the skin, massaging the spot, gradually injecting a little more until the heart rate becomes faster. The attacks are best prevented by the use of ephedrine and of barium chloride. The latter drug can be given in doses of $\frac{1}{2}$ to one grain several times per day and is occasionally effective when all other methods have failed.

Not all attacks of sudden great slowing of the heart are due to complete block. Much more commonly such seizures are the result of reflex stimulation of the vagus nerve. Such stimulation may arise from various sites of the body, including

certain parts of the gastrointestinal tract or the eyeballs. However, much the most common site is the carotid sinus, which has a special nerve (the nerve of Hering) with a particular influence on the heart rate and the blood pressure. When one suspects that a patient with recurrent attacks of bradycardia lasting only a few minutes had the hypersensitive carotid sinus as the cause, one can usually prove or disprove the point by having the patient assume a sitting position, then press firmly on the carotid artery just behind the angle of the jaw, first on one side and then on the other. At the same time one listens to the heart with a stethoscope and observes whether extreme slowing occurs. Hypersensitivity of the carotid sinus is one of the most common causes of sudden bradycardia associated with weakness, faintness and even with attacks of unconsciousness. It should be looked for in all patients complaining of these symptoms, and particularly so if the patient mentions that turning of the head or a tight collar tends to induce the attacks. When this syndrome has been proved to exist, it can sometimes be satisfactorily treated by the use of atropine, ephedrine or allied drugs. Some of the patients are benefited by vitamin B₁. In the severest cases a cure may be effected by removing a tumor of the carotid body or a lymph node pressing on the carotid artery, or by simple denervation of the carotid artery by section of Hering's nerve.

The conditions discussed do not by any means constitute all of the cardiovascular emergencies. However, they do make up a group of fairly common states and the point which I wish to emphasize particularly is that here, as elsewhere in medicine, proper therapy depends entirely on accurate diagnosis. In rare instances the use of special implements, such as the electrocardiograph, may be necessary. But the physician who studies the patient carefully can in most instances make the diagnosis at the bedside with no special tool except his stethoscope to aid his powers of observation.

INSTINCT IN THE CHOICE OF DIET

(Abstract in *Charleston Medical Journal*, 1849)

Mr. Thomas Hunt, before the Medical Society of London, observes that with regard to the quantity and the quality of the food, instinct is a far better aid than science, that many cases of dyspepsia originate in, or are aggravated by, a rigid adherence to artificial rules of diet, a too restricted use of the good things which nature has provided. It were presumptuous to dictate to the economy of digestion what materials are best suited to it. The natural sensations of the patient are far safer guides, both in health and in disease. In early fever, the appetites of man are far different from those in health; as fever advances and takes on new types, the longings of the patient vary. The author relates several instances in which he has known disease of the digestive organs to be cured by the free indulgence in articles which are generally denounced as improper.

Some Practical Aspects of Endocrinology*

ARTHUR GROLLMAN, Ph.D., M.D., Winston-Salem

From the Department of Internal Medicine, Bowman Gray School of Medicine of Wake Forest College

ENDOCRINOLOGY is a relatively recent development of medicine. Like any innovation it still tends to be confused in many respects. The speed with which it has developed in recent years has produced a mass of unproved or partly proved literature which in turn has led to considerable confusion and unwarranted claims. Clinical endocrinology, in particular, is often subject to wild and vague theories; utilizes forms of therapy which have proved worthless; and indulges in vagaries which border on sheer quackery. However, recent advances in the field of endocrinology have placed the clinical aspects of the subject on a firm and scientific basis. Both diagnosis and treatment can be placed on as certain a ground as other well-established fields of medicine. There is no need for depending on speculation, nor for utilizing therapy the efficacy of which can not be established experimentally. Where this can not be done one may with assurance dismiss the claims as unworthy of serious consideration.

Studies in endocrinology have thrown much light on numerous problems that confront the practitioner daily. Such common complaints as adiposity, abnormalities of growth or menstrual disturbance, as well as numerous obscure conditions formerly left undiagnosed, misinterpreted or designated as hysteria or hypochondriasis, may now be attributed to certain endocrinological dysfunctions. The frequency of these disorders may be illustrated by the fact that among 50,000 patients at the Johns Hopkins Hospital, 900 suffered from diabetes, 400 from hyperthyroidism, 100 from hypothyroidism, 60 from adrenal disorders, 50 from hypoparathyroidism.¹ Endocrine disorders are thus far from uncommon in everyday experience.

One fundamental fact which has contributed greatly to misunderstanding the nature of endocrine diseases is the belief—shared by physiologists as well as by clinicians—that each hormone exerts a specific action in the organism. This is a wrong concept which leads to errors in diagnosis and treatment, as well as in the general conception of endocrine disease. Thus, the old view that insulin is necessary for burning sugar is no longer acceptable, for carbohydrate can be and is metabolized in the absence of insulin. All of the hormones exert basic functions in the organism which involve many reactions and affect many tissues and organs

in the body. They are in the nature of enzymes and may be looked upon as endogenous vitamins. That is why they manifest their dysfunctions in such a variety of ways and why one finds the hormones of the rat, for example, identical with those in the human, and why one can carry over to one species results of studies made on members of another species.

We are traditionally in the habit of associating insulin, for example, with the metabolism of glucose, or thyroid hormone with oxygen consumption, because sugar metabolism and the basal metabolic rate happen to be strikingly affected by dysfunction of the pancreas and thyroid. But we must remember that protein and fat metabolism are also disturbed in diabetes, and that the effects of thyroid dysfunction as manifested in a derangement of the heart may be important from a clinical standpoint when the change in oxygen consumption is of no practical import. This point is of more than academic importance, because it involves not only our fundamental concepts as applied to diagnosis but should also vitally influence our methods of therapy.

Another example of the error involved in associating too closely an endocrine gland with some specific function is exemplified by our ideas about the pituitary. This gland has so long been associated in our minds with growth that the claim has been made that the use of pituitary extracts will induce growth in dwarfism. As a matter of fact the available pituitary extracts can not be relied on to produce either gigantism or ordinary growth in the rat, much less so in the human patient. By far the best effects obtained in the treatment of dwarfism have been obtained by the use of thyroid extract. Pituitary dwarfism is, indeed, rather a rarity. On the other hand dwarfism is frequently a result of hypothyroidism, and excellent results have been obtained by administering the readily available thyroid extract in treating these patients. The idea that the pineal gland is associated with precocious development is another cherished idea, now shown to be fallacious. Precocious development is probably never a result of pineal tumor unless it impinges on contiguous structures, but is induced by other affections of the cranial contents.

The most satisfactory results in clinical endocrinology have been obtained in the various dis-

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eases of the thyroid, either in insufficiency or in hyperactivity of this gland. Although the classical type of myxedema is readily recognized, the lesser degrees of the disease are frequently overlooked in diagnosis. Recent physiological investigations have furthered our knowledge of hyperthyroidism with a resulting improvement in the methods of treating this condition. As a result of the better understanding of the mechanism of action of iodine, and of the factors involved in the etiology of the disorder, the preparation for operation is much better and the result of surgical interference has been greatly improved. As regards the therapy of hyperthyroidism, the use of x-rays has received increasing favor. The view that this procedure induces an increased vascularity and leads to the formation of adhesions is not based on sound evidence. This method has given excellent results in the treatment of recurrences, in patients who refuse or are otherwise not amenable to operation, in mild cases in which the delay is not as serious, and in such patients in whom nervousness is the most prominent symptom and constitutional changes minimal.

Our advances in understanding of the function of the parathyroid glands have led to satisfactory treatment of parathyroid insufficiency and of diseases due to an overproduction of the hormone of these glands. Although an acute insufficiency of the parathyroid glands is readily recognized by the presence of tetany, chronic insufficiency is often overlooked because of the rather mild and vague symptoms, with fatigue, muscular weakness, gastrointestinal irritability, and such changes as are frequently misinterpreted as manifestations of hysteria or hypochondriasis. Examination of the blood and urine, however, can make the diagnosis objective; and early recognition makes possible the institution of treatment which not only relieves the symptoms, but prevents the development of mental retardation, atrophic changes of the teeth, skin and nails, and lenticular opacities or cataracts which mark the chronic stages of this disease.

We now recognize osteitis fibrosa cystica as being only the final condition induced by hyperparathyroidism. Milder forms of this abnormality of the parathyroid glands may manifest themselves in one of three ways: (1) The hypercalcemia which is characteristic of the disorder is frequently marked by weakness, anorexia, loss of weight, muscle, joint and abdominal pain, bradycardia, cardiac irregularities and rather vague symptoms which are frequently undiagnosed or erroneously attributed to neurasthenia. (2) The skeletal involvements are more easily recognized because of the occurrence of generalized calcification, cysts, giant-cell tumors, pathological fractures, skeletal

deformities and epulides. The early recognition of the disorder prevents, however, the development of the skeletal involvement noted in osteitis fibrosa cystica. Finally, (3) the abnormal excretion of calcium and phosphorus which occurs in hyperparathyroidism leads to polyuria and polydipsia and is responsible in certain regions for three to five per cent of all cases of renal calculi. If unrecognized, these abnormalities may lead to nephrocalcinosis and renal insufficiency.

Our new knowledge of carbohydrate metabolism has led to a recognition of a number of disorders characterized by hypoglycemia. Besides hyperinsulinism, which is rather rare, fainting, giddiness and other obscure symptoms frequently attributed to gastric ulcer or nervous or mental symptoms, are found to be associated with the occurrence of hypoglycemic reactions. These may be due either to functional overactivity of the pancreas or to the presence of tumors in this gland; to liver disease, which frequently does not manifest itself in any other way; or in rare cases to disease of the adrenal or pituitary. Exact diagnosis of these cases is possible and adequate therapy may be instituted once the etiology is recognized.

Notable advances have been made both in the diagnosis and the treatment of the various disorders associated with the adrenal glands. Cases of Addison's disease which previously had to remain undiagnosed in life, due to the absence of some of the so-called classical symptoms, may now be recognized by a study of the electrolyte disorders which are present in this disease. The treatment of these conditions has also been greatly advanced by attention to and correction of abnormalities in salt and carbohydrate metabolism and the use of synthetic compounds as well as extracts prepared from the glands.

Perhaps in no field of medicine have the advances in endocrinology shed so much light as in the field of reproduction. Studies on the general biology of sex have explained functions which were previously mysterious. An entirely new theoretical basis for many of the problems facing the gynecologist and which the clinician encounters in his everyday work, have been clarified considerably by the advances made in the endocrinological aspects of reproductive physiology. A number of compounds have been introduced for the treatment of these disorders. One of the difficulties which the clinician faces is the multiplicity of compounds which are offered him by enterprising manufacturers, with unwarranted claims and the subsequent promiscuous use of these compounds by the unwary practitioner. The same simple compound is often presented to him under a variety of cacophonous names, often misleading as regards their origin,

as for example when substances prepared from urine are sold with the implication that they are derived from the pituitary.

The empirical use of the sex hormones is to be deprecated. It must be remembered that these are potent pharmacological agents which may be harmful if misused. We must not forget that the cause of uterine bleeding may still be a malignant process and that empirical use of these preparations by the general practitioner simply because they may be easily administered is no excuse for the exclusion of malignant processes as the cause of abnormal bleeding. A complete study of the case is essential before one can utilize rationally any particular endocrine product. Empiricism as the sole basis for therapy is seldom justifiable.

I have tried to point out briefly to you some of the points of practical value which have resulted from the scientific study of endocrinology. We need no longer indulge, as has so frequently been done, in vague theories, assumptions, or unwarranted beliefs. We must base our diagnosis and treatment on exact objective and scientific knowledge. If this be done, the general practitioner will find his ability to make accurate diagnoses in heretofore obscure conditions greatly increased, and his armamentarium for treating many conditions otherwise irremediable gratifyingly augmented. There still remain many fields of the subject which have not been satisfactorily investigated. However, we may hope that as a result of the feverish activity in the fundamental studies in endocrinology, our knowledge will be gradually enlarged, with the probability of further application to many otherwise obscure clinical problems.

J. Grollman, A.: *Essentials of Endocrinology*, J. B. Lippincott Co., Philadelphia, 1941.

EXTRACTS FROM A LECTURE ON DIGITALIS BY DR. G. G. SIGMOND AS PUBLISHED IN THE LONDON LANCET

(From "Reviews and Extracts" in *Southern Medical & Surgical Journal*, October, 1838)

Digitalis diminishes the frequency of the action of the heart; hence the circulation through the system becomes so slow as to allow the kidneys much more time to take from the blood the watery portion which they secrete: for, says Dr. Sigmond, we have no reason to believe that these organs are stimulated to any increased action by the herb.

Of the use of Digitalis in Dropsy. When it is thought right to employ it, *be on the guard*. Never continue it too long; and always be wary in attempting to increase the dose. It is not a remedy to be trifled with. Where there is great general strength and vigour unimpaired by the ravages of disease when the muscular fibre is tense, the skin hard and dry, if the individual be inclined to corpulence, if the countenance be at all indicative of determination to the head, or venous relaxation, or if the habit of the bowels be slow and difficult to be called into action, it will generally be found useless; occasionally injurious. Dr. Withering first drew the distinction of the cases of hydrophic effusion in which digitalis would be found **unsucces-**

ful, and Dr. S. believes the truth of this distinction is confirmed by the great majority of medical men who have been in the habit of employing it.

On the other hand, experience demonstrated that there are states in which it is pre-eminently efficacious. These are, weak, delicate, irritable constitution, where there may be present much laxity of fibre, a thin, soft, smoothe pale skin, which, in the anasarous limb seems to be transparent; where, upon pressure on the skin, there appears to be no elasticity whatever, but the impression sinks deeply, and there is little power of resistance, where the emaciation of the other parts of the body is very striking, when the countenance is pale, when there is feeble or intermitting pulse, when the constitution has been much broken down, more particularly if it were originally strong, sound and robust, where any indulgence in spirituous liquors, bad habits of life, the action of mercury, or any debilitating cause has produced the mischief; in such cases digitalis will be indicated in preference to most diuretics. It should be remembered, however, that it is merely the evacuation of the hydrophic fluid which is effected, and that this is not more than one step in the cure of the disease, more particularly if that disease be connected with a disordered state of the viscera, or if it be attended with paralysis.

The disregard of the distinction of the different states in which it is deleterious or beneficial, has given rise to many contradictory statements of its diuretic effects.

In hydrothorax from any obstacle to circulation, as hypertrophy of the heart, when it is the termination of long protracted disease of the thorax, if it be not accompanied by disordered condition of the valves of the heart, digitalis may be employed.

In ascites and in anasarca, dependent on disordered states of the exhalent vessels, which throw out a larger quantity of fluid than can be absorbed, good effect is produced by diminishing the impulse with which the blood is directed to the capillaries; and that fluid is presented to the kidneys for a greater length of time, whereby the kidneys are enabled to secrete much more than they could otherwise.

In ovarian dropsy, digitalis is seldom found to succeed.

In hydrocephalus in infancy, it is highly noxious.

Many practitioners prefer lowering the action of the system, when necessary, before the use of digitalis, by ample depletion. It is true, he says, that after venesection, digitalis is more diuretic; but he adds, that the most fatal effects have occurred from giving the herb after blood-letting had been practised.

Deleterious effects are nausea, vomiting, purging, excessive depression of spirits, fainting. The skin becomes bedewed with a cold sweat, tongue and lips swell, profuse salivation occurs—sometimes the action of the kidneys is totally suspended. The pulse intermits and is slow, and delirium, hiccough, cold sweats, confused vision; sometimes convulsions, and frequent faintings follow, till death closes the scene.

The results occur after the *endermic* use of this article. It is generally at about the eighth dose, says Dr. S., that the baneful influence of this herb is visible; and this often happens, whether the dose has been large or small—whether diminished or increased; whether it has been given twice or thrice in the course of the day.

HYPODERMIC MEDICATION 100 YEARS AGO.—M. Lafargue has been and is still engaged in a series of experiments on the inoculation of various medicinal agents. He has ascertained that the narcotic effects of morphine are readily developed when the drug is inserted under the cuticle.—*Bul. l'Acad. de Med., via Southern Med. & Surg. J., (Augusta, Ga.), 1837.*

Therapeutic Application of the Various Insulins*

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AFTER almost twenty years of accumulated experience with Insulin, the mortality of diabetes is found to have mounted to ninth place among the leading causes of death, and the magnitude of the problem of its control is just being appreciated. A growing concern about the public-health aspect of all the chronic diseases was expressed in the recent National Health Survey,¹ where it was estimated that there are now 660,000 diabetics living in the United States. Other statistics indicate that this number will reach 1,000,000 by 1950. These figures represent between 5 and 10 diabetic patients per physician, and it seems likely that all but a relatively small proportion of these cases are being cared for, at least part of the time, by the family doctor. The medical profession has indicated its awareness of this situation by the formation in recent years of the Pennsylvania Diabetes Commission, operating under the Pennsylvania State Medical Society; the Diabetes Associations of New York and of Detroit; the Council on Diabetes of the Public Health Association with the Cincinnati Academy of Medicine; and others. During the past year the American Diabetes Association has been formed and its first meeting was held just prior to the A. M. A. meeting in Cleveland. All these groups are attempting to improve the general level of diabetes therapy by educational measures directed through the family physician to the population at large. More widespread application of the knowledge which has been accumulated is essential.

PRESENT STATUS

The present status of control of diabetes can best be appreciated by a few statistics. In Joslin's experience there has been a decrease in coma deaths from 64 to 4 per cent, and an advance in the average age of diabetic patients at death from 44.5 to 64.8 years. General experience has not been so favorable. While the mortality rate for diabetes in the United States has trebled since 1900, the rate for tuberculosis has steadily diminished, and the prophecy made by Dr. Bolduan several years ago that these rates would soon cross, seems actually to be fulfilled. Crude death rates vary widely in the different states and areas of the United States, and probably vary equally widely in different communities of the same state. Recent surveys² emphasize that the statistical incidence of diabetes is highest where medical supervision is closest. An analysis of 183 (one year's) deaths in

Cincinnati,³ the records of which indicated diabetes as the cause revealed that three-fourths of these patients had never followed a planned diet, and only 21 per cent of them had been receiving regular injections of Insulin. It is obvious from such figures that the remarkable improvement of statistics from certain well-known clinics does not represent the status of diabetic treatment in the country as a whole. This must always be the responsibility of the general physician.

RECENT DEVELOPMENTS

The treatment of diabetes since Insulin was introduced has progressed through a number of distinct phases. First, there was a period of adaptation to Insulin therapy of the very low-carbohydrate, high-fat diets then in common use. During the next several years, the controversy raged between the exponents of high-fat diets and high-carbohydrate diets. Since Protamine Zinc Insulin was introduced, this question has been displaced by an agnostic attitude in many quarters concerning the deleterious effects of hyperglycemia and glycosuria. Even many of the more conservative observers have relaxed somewhat their vigilant endeavor to maintain reasonably normal blood-sugar levels and prevent glycosuria. Since Soskins' demonstration⁴ that carbohydrate utilization may proceed in animals even in the absence of Insulin, depending upon the height of the blood-sugar level, there have been attempts to compel carbohydrate combustion to take place by deliberately inducing extreme hyperglycemic levels. It has been suggested that hyperglycemia and glycosuria (in the absence of ketosis or dehydration) are not responsible for diabetic complications, or for delayed healing of wounds, and are not incompatible with reasonably good health and satisfactory progress of cases of diabetes. Without too great a strain on the imagination, some of these data might be interpreted to mean that high-blood-sugar levels and sugar wastage in the urine are desirable accompaniments of this disease rather than indications of its poor control. A natural question might be: Why treat the diabetic at all, except insofar as ketosis is concerned?

Within the past year or two important evidence has accumulated which places the treatment of diabetes on a much firmer foundation. Two great fundamental principles can now be stated: (a) *give enough carbohydrate to protect the liver and*

*Presented before the Piedmont Postgraduate Clinical Assembly, Anderson, S. C., September 9th, 1941.

(b) *give enough Insulin to protect the islets of the pancreas.* The first of these principles is based on the conclusions reached by Mirsky,⁵ Stadie,⁶ and others, who have pointed out the independence of the carbohydrate- and the fat-oxidizing systems. Any phenomenon which will accelerate glycogen depletion in the liver—e.g., Insulin deprivation, hyperthyroidism, hepatitis, infection, surgical procedures, gastro-intestinal disturbances, vomiting—will result in a secondary acceleration of fat oxidation and the consequent production of excessive amounts of acetone bodies. The second principle is based upon the culmination of a whole train of investigations by Houssay and Evans, leading to the production by Young, Best, Long, Lukens, and others, of permanent diabetes in animals by means of anterior pituitary injections, and finally the prevention and cure of this type of diabetes by Insulin. If the conclusions from animal experiments can be applied to clinical problems, renewed and far greater emphasis must from now on be placed on the importance of early and continuous maintenance of good clinical control of diabetes. Allen advocated this in 1913, and again in 1922, but the full significance of his observations has just been rediscovered.

Haist, Campbell and Best,⁷ of Toronto, in studying the factors which affect the insulin content of the pancreas, have demonstrated that the production of diabetes in animals by administration of pituitary diabetogenic substances may be prevented by dietary means, or by the administration of large doses of Insulin. Fasting, fat feeding, or Insulin administration, in rats and in dogs,⁸ leads to a decrease in insulin content of the pancreas, but without degeneration of the islet cells. Carbohydrate-feeding, on the other hand, in the absence of Insulin, causes an increased insulin content in the pancreas; however, this increase is not sustained. Daily administration of Protamine Zinc Insulin augments the effects of fasting and fat-feeding and tends to prevent reduction in insulin content and degenerative changes produced by the anterior pituitary extract alone.

Allen⁹ demonstrated many years ago that partial pancreatectomy, sufficient to cause production of diabetes in dogs, is accompanied by progressive degranulation and hydropic degeneration of the beta cells in the islets of the pancreatic remnant. He found that *active* diabetes is prerequisite for the occurrence of hydropic degeneration, and that the two are parallel in degree and course. In those animals in a borderline state or in early stages of diabetes, "a genuinely new formation of islands is possible by direct proliferation. But when all beta cells, new and old, are exhausted, it is evident that

the regenerative power is also exhausted, and no further production of islet cells is possible."

Lukens and Dohan^{10, 11, 12} found that permanent diabetes can also be produced in the cat by anterior pituitary injections provided one-half to three-fourths of the pancreas be first removed. Permanent recovery did not occur in certain animals treated with Insulin. These instances were associated with infection, poor control of diabetes by Insulin, or with delay in institution of Insulin therapy until sufficient time had elapsed to result in irreversible damage to the islet cells. These experiments lead once again to the assumption that hydropic degeneration is the early lesion of diabetes. More recently,¹³ by a carefully devised set of experiments, these observers have shown that hyperglycemia per se is the factor underlying the pathological changes in the islet tissue. Hence the emphasis that must be placed on protection by Insulin of the islet cells. Lukens' observations suggest that the reason it is not seen more often in cases of human diabetes may be that the reversible stage has been passed long before patients reach the autopsy table. This period is much shorter in the dog than in the cat, and we do not know how long reversible changes are present in the human. Warren^{14, 15} has reported 20-odd cases of hydropic degeneration in humans and believes that the lesion was relatively common in pre-Insulin days, and may be largely modified now in patients who have received large amounts of Insulin a short time prior to death.

APPLIED PHYSIOLOGY

The chief therapeutic implication of these experimental studies is that the factors which prevent diabetes from developing will also prevent diabetes from progressing. There is proof that factors leading to overactivity of the islet cells may produce irreversible changes; but the resting procedures—fasting, fat-feeding, and control by Insulin—prevent degenerative changes from developing in cells not already affected, and permit restoration of cells that have not lost all recuperative power.

In the treatment of patients, departures from the normally balanced diet are permissible for only short intervals, or nutritional requirements will be unsatisfied. Starvation is not desirable, neither is excessive fat-feeding. Recourse must then be had to Insulin and Protamine Zinc Insulin, in conjunction with a diet planned to satisfy long-term nutritional requirements. *Early treatment and continuous control* are the factors of greatest significance.

INSULIN AND PROTAMINE ZINC INSULIN

Early treatment of diabetes should not offer much difficulty, but continuous control is a different matter. One of the problems, that of a night-

rising blood-sugar level, may be solved by use of a modified Insulin; but here, too, lie certain difficulties, which can best be resolved by understanding the physiological action of the Insulins.

In practical therapy, the unmodified Insulins, whether of amorphous or crystalline origin, may be considered interchangeable, the chief difference being that Insulin made from zinc-Insulin crystals has the advantage of chemical purity. Both are preparations having a rapid effect which is exerted only for a few hours, depending much upon the

size of the dose. Clinical studies^{16, 17, 18} indicate their essential similarity in action, and blood-sugar curves based on observations made on large groups of animals are apparently identical.

Protamine Zinc Insulin, on the contrary, is only slowly effective, but its duration of action exceeds twenty-four hours, again depending somewhat on the size of the dose. Wilder's¹⁹ blood-sugar curve (Figure 1), made on a patient with severe diabetes who was fed every two hours day and night, has been regarded by clinicians as illustrative of the typical action of Protamine Zinc Insulin.

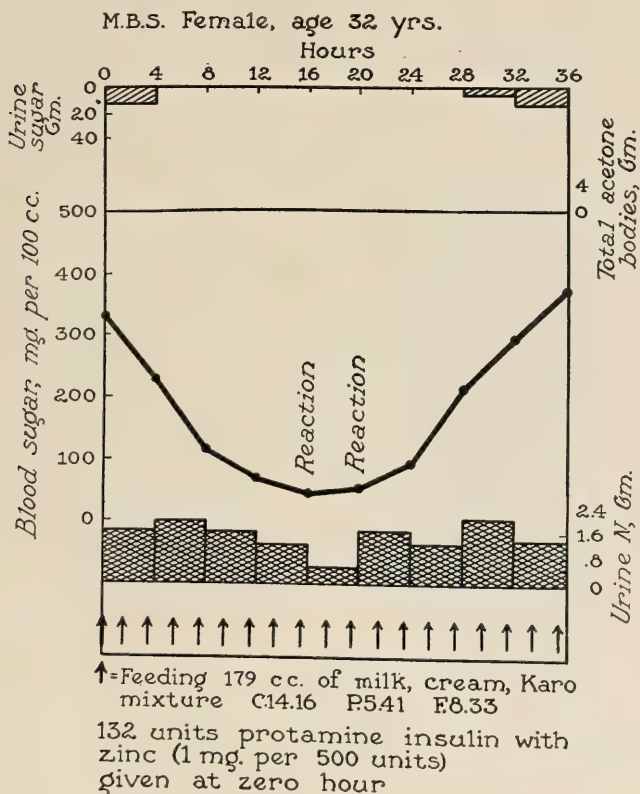


Figure 1.—Reproduced by courtesy of Dr. Russell Wilder

This curve shows a slow onset of hypoglycemic effect, which reaches its maximum sixteen to twenty hours after the dose, then gradually wanes until completely expended thirty-two to thirty-six hours later. Not usually considered is the fact that it represents an acute experiment with a patient under conditions of diet at wide variance from those obtaining under daily living conditions. With this in mind, another interpretation is possible, by transforming the blood-sugar data into a dose:effect curve (Figure 2).

Cumulative curve transformed from blood sugar curve obtained when 132 units of protamine insulin were given a patient with blood sugar of 330 who was fed at 2-hour intervals.

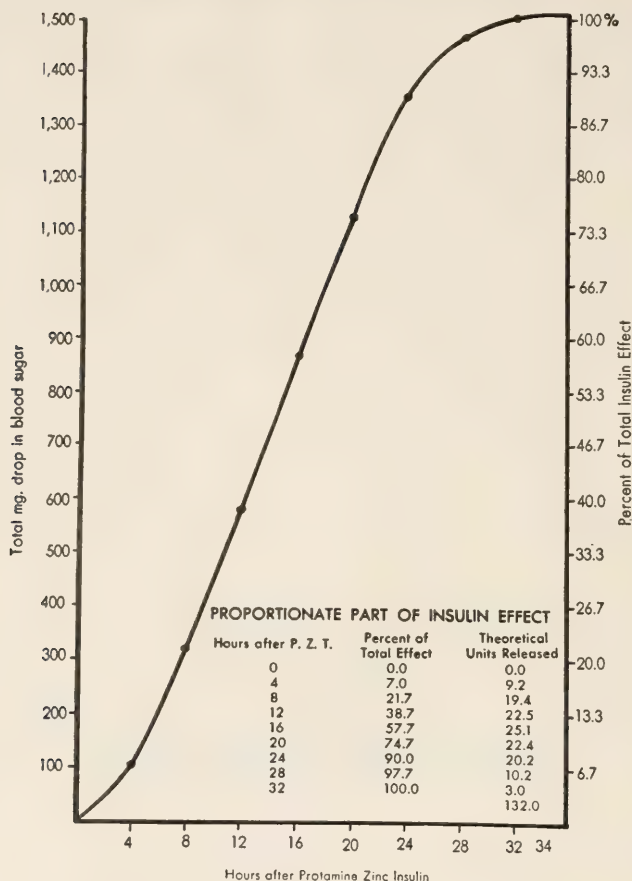


Figure 2.—Cumulative curve based on Figure 1.

The fall in blood-sugar level in this instance apparently assumes the form of a symmetrical frequency curve which in biological data may be transformed into a sigmoid curve similar to that obtained with dosage:effect data. We do not know whether the sigmoid figure is caused by protamine releasing Insulin more slowly at first, and again more slowly at the last, due to a diminishing supply; or whether it is due to a variation in the body's ability to utilize the Insulin available at different times. The most important factor, as far as the present consideration is concerned, is the proportionate part of the total Insulin effect that has taken place at any given time. For the sake of simplicity, these proportionate parts are expressed in Insulin units, calculated in four-hour periods.

It must be borne in mind that these data are only representative, that they have been calculated for a particular experiment, and that they *may or may not be the actual number* of units released from time to time. Nevertheless, they are in agreement with many clinical observations and because of this may necessitate revision of the conception that Protamine Zinc Insulin has a gradually developing period of maximum effect; since if the amount of Insulin effective beyond twenty-four hours is added to the amount available during the first four-hour period following another dose on the next morning, it is obvious that an almost equal amount of Insulin will be released during each four-hour period on subsequent days. This assumption that Protamine Zinc Insulin releases its Insulin at a fairly uniform and constant rate explains its inability to prevent glycosuria following ingestion of large amounts of carbohydrate, the relative un-

importance of the time of giving the dose; the reason true cumulative action does not persist beyond the first two or three days; and, furthermore, it supports the conclusions of Ricketts,²⁰ which were reached from a totally different point of view, that Protamine Zinc Insulin regulates chiefly the endogenous carbohydrate metabolism. It has been the general experience that the patient with mild or moderate diabetes, with a total Insulin requirement not exceeding 30 to 40 units, does well with Protamine Zinc Insulin. The islet tissue in such a case is still capable of responding to the presence of exogenous carbohydrate by the production of insulin. The severe case needs supplementary rapidly-acting Insulin, as originally suggested by Wilder, or as an alternative, readjustment of the metabolic load (food given at the various meals) to the amount which can be utilized by the amount of Insulin available at that particular period. In-

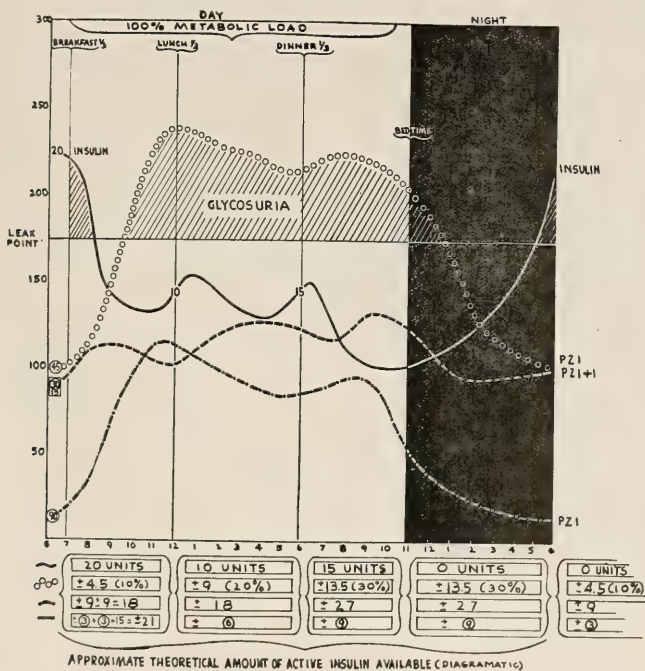


Figure 3.—Approximate calculated amounts of active Insulin available under different methods of administration.

In the first instance (solid line) three doses of unmodified Insulin—20 units before breakfast, 10 units before lunch, and 15 units before dinner—each provides its full activity at times when the food load is greatest. In this instance, daytime control is good. The difficulty arises at night, when the activity of the earlier doses has been expended, resulting in loss of diabetic control and a high fasting blood-sugar level.

When Protamine Zinc Insulin alone is administered in identical amount (45 units) but in a single dose before breakfast (circle line), the fasting levels are satisfactory, but daytime control is poor. The reason is obvious from the calculation below, since the free Insulin available during the interval between breakfast and lunch has been sharply reduced from the 20 units previously administered to 4.5 units. This results in poor control during the periods of heaviest food load.

If an attempt be made to render the urine sugar-free during the day by administering larger doses of Protamine Zinc Insulin (dot-dash line), the blood-sugar curve is placed on a lower plane, but its shape is not materially altered. Under such circumstances, daytime control may be fairly satisfactory, but so great a proportion of the Insulin is freed at night that nocturnal hypoglycemia is bound to result.

A practical solution of the problem is the administration of enough slowly-acting Insulin to maintain good control during the night without inducing hypoglycemia, and then providing a supplementary dose of rapidly-acting Insulin large enough to supply the required number of units of free Insulin during the peak of the metabolic load (dash line). In the instance illustrated this was accomplished by giving 30 units of Protamine Zinc Insulin and 15 units of unmodified Insulin before breakfast. About 3 units are released from the dose given twenty-four hours previously, to which must be added the 3 units that become available following the dose given the same morning, a total of 6 units that are being supplied by Protamine Zinc Insulin. The addition of 15 units of unmodified Insulin brings the total to 21 units of Insulin that are to act during the interval between breakfast and lunch. The noon meal and the dinner are accompanied by 6 to 9 units, respectively, of freed Insulin, with another 9 units released slowly over the night period.

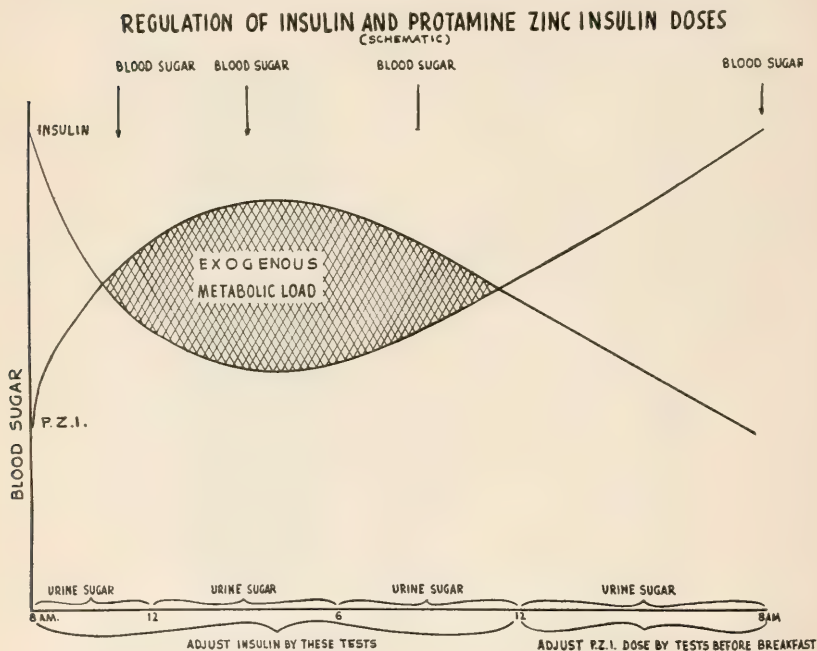


Figure 4.—Regulation of Insulin and Protamine Zinc Insulin Doses.

The fasting blood-sugar level is characteristically high in Insulin-treated cases, but it is lowered during the day when Insulin is being injected before meals. The fasting level of blood sugar is low in the case of Protamine Zinc Insulin, however, but ascends in the day time, since the active Insulin is released too slowly to compensate for the sudden influx of carbohydrate with meals. Observations of the excretion of sugar at the different periods of the day as diagrammed are very probably the most helpful single measure of diabetic management in gaining satisfactory control of the case.

terpretation of these data clinically is illustrated in the accompanying diagram (Figure 3), which includes the calculated theoretical amounts of Insulin available during different periods of the day when the patient is treated by means of 45 units of unmodified Insulin, 45 units of Protamine Zinc Insulin alone, 90 units of Protamine Zinc Insulin alone, or by 30 units of Protamine Zinc Insulin with a supplementary dose of 15 units of unmodified rapidly-acting Insulin.

A slight reduction in the amounts of food given at these times may be advantageous, and the provision of a small lunch at bedtime, containing some protein (such as a sandwich or a glass of milk) aids materially in readjusting the metabolic load to the slow rate of release of active antidiabetic principle from Protamine Zinc Insulin.

Regulation of the dose of either Insulin or Protamine Zinc Insulin must be based on different observations. If one will bear certain principles in mind, it is possible to simplify the issue. The diagram (Figure 4) is a schematic representation of the effect of unmodified and Protamine Zinc Insulin, showing their almost opposite effects in altering the blood-sugar curve in a severe case of diabetes.

SUMMARY

1. The majority of cases of diabetes are of mild or moderate degree, and may be satisfactorily controlled with a daily dose of Protamine Zinc Insulin. The patient with mild diabetes, if neglected, does poorly; but the victim of even the severe case, if carefully treated, does remarkably well.

2. Upon the family physician, who sees most of these cases first, depends the early diagnosis of new cases, and upon his management depends largely the course of the case—whether it is to remain mild, or whether alternating bouts of activity brought on by failure to observe dietary restrictions, by infection, or by delay in administering Insulin when this is necessary, ultimately convert the mild case into one of maximum severity.

3. Two principles of treatment have been evolved: (a) enough carbohydrate to protect the liver, and (b) enough Insulin to preserve the islet mechanism.

4. The physiologic action of Insulin and Protamine Zinc Insulin differ only in rate of release of active antidiabetic principle. This factor is considered from the standpoint of theoretical dose: effect data, and applied to the treatment of a typical case.

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CAESEREAN SECTION.—M. Caste stated at a recent meeting of the Academy of Medicine (Paris) (Feb. 17th, 1838) that some years since, a woman was in labour at the *hospice de perfectionnement*, the professors were all assembled, and the caesarean section resolved on. The crowd of students was so great that some delay took place whilst arrangements were making for their accommodation, and during this time the woman's delivery took place naturally.

M. Gimelle also stated that he saw, at the *hospice* of M. Dubois, a small woman who had five times submitted to the caesarean section, and who was delivered naturally the sixth time.—*Southern Med. & Surg. J.*, 1838.

LEMON JUICE, $\frac{1}{2}$ oz., q. 4h, has been much and successfully used at Guy's Hospital, in the treatment of acute rheumatism. It is also of much service in obstinate dysmenorrhea.—*Charleston Medical Journal*, 1849.

Aging As A Problem of Industrial Health*

EDWARD J. STIEGLITZ, M.D., F.A.C.P.,** Bethesda, Maryland

AGING is as old as Time. Everything that exists ages. Aging is a part of living. It affects the processes of life. Yet, curiously, we know very little about it. The study of aging as a process has been conspicuously neglected until very recently. Philosophers, biologists and physicians have been strangely content to take the phenomenon of aging as a matter of course and to ignore the complex questions which are raised. The reasons for this long neglect are not hard to find. First of all, science normally attacks the simpler problems first. Secondly, and this is true even today, aging is largely taken for granted. Air conditioning is now a fact accomplished. The time has come when the progress of mankind demands energetic attack upon the problems of aging.

Man is a utilitarian creature and few indeed are those scientists who seek truth with purely abstract curiosity free from any practical motivation. Fewer still are those who encourage and finance such pure research. Up until recently the problems of aging have held largely academic and theoretical interests. This is changed. There is urgency in the need to know more, much more, about aging. With the rest of the world, this Nation is growing older chronologically; in the basic structure of its population this Nation is growing older faster than is the rest of the world. In the virile days of pioneering, physical hardships and early disease left but few to reach ripe senescence. In the last fifty years, preventive medicine, sanitation and vastly improved pediatrics have dramatically raised the average age of our population. This increase in age continues; it was, in fact, accelerated in the last decade.

At the turn of the century the average life expectancy at birth was but 47; today it exceeds 63. In 1900 only 17 per cent of the population of the United States were 45 or more years of age. In 1940, 26.5 per cent were over 45, and conservative projection leads us to expect that in 1980—only 40 years hence—more than 40 per cent of our population will be over 45. Data from the 1940 census reveal that the population of the United States as a whole increased 7.2 per cent since 1930, but that the number of persons aged 65 or more increased 35 per cent in the last decade. There are now nearly nine million people of 65 or more.

Were all these people vigorous and well we would have reason to rejoice complacently in the benefits of advancing medical science. But they are not all healthy. A large and growing number suffer from the so-called degenerative diseases and are prematurely disabled thereby. These disorders, whose incidence rises with advancing years, are not limited to the senescent. Senescence is a continuous process and the *prolonged disability* from cardiovascular-renal diseases, arthritis, diabetes mellitus, gout and/or cancer in those in the fifth and sixth decade of life is of even greater moment than the rising proportion of deaths due to these disorders. The period of greatest significance is that from 40 to 60. The infants and youths now saved from diphtheria, smallpox, typhoid fever, summer diarrheas and other infective diseases are potential victims for the disorders of late maturity. There are several important distinctions between these two groups. The diseases of youth are characteristically acute, florid, self-limited, brief and exogenous. The disorders of late maturity are chronic, insidious, progressively disabling before they finally destroy, and largely endogenous.

The implications of this handwriting on the wall are so vast that no apology is needed for emphasizing the urgency and great importance of gerontology, the study of aging. Advances in medical science, the prevention and improved treatment of infective diseases, better pediatric care and nutrition and public health's contributions to sanitation have tremendously enhanced the chances of survival through infancy and youth. The increased longevity of our population can be made a splendid advance if length of years be paralleled by health and productiveness; it is also potentially disastrous if the chronic, progressive and disabling disorders of later life are not controlled. The older fraction of our population represents an immense, but largely unutilized and unappreciated, resource. These increasing millions of older men and women will remain a problem and a potential menace to economic equilibrium until we know enough about aging to maintain health into senescence and to use wisely the capacities of those we call old.

Gerontology, the science of aging, crosses the lines of all divisions of thought and thus applies all the many methods of science as instruments for its

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advance. This is confusing. But it is possible to bring some order out of this chaos and to orient ourselves in this vast and uncharted sea. With these points in mind we may chart the courses for many voyages of exploration. There is much work to be done.

Gerontology may logically be divided into three major categories of thought:

1. The biology of aging (particularly of senescence).
2. The clinical problems of aging man, both normal and abnormal.
3. The socio-economic problems.

The first of these divisions of thought deals with all living matter and involves many disciplines. Unanswered as yet are such fundamental questions as: just what happens to a cell with aging?, why does aging occur?, what accelerates or retards it?, what mechanisms are involved, and why? The elucidation of these basic questions may solve many riddles. It is within this sector that fall the biochemical, physiological, cytological, botanical and anatomical investigations which are necessary to define more precisely what aging is and does. For example, the changes in cellular respiration brought about by aging may indicate the road for solution of the problems of arteriosclerosis or cancer.

The clinical problems of senescence in man are of more immediate concern, but their solution will depend greatly upon the advances in the first category of thought. Obviously, man ages either normally or abnormally. Normal aging brings many changes, some so obvious as to be conspicuous, others obscure and occult, all inevitably progressive. Normality is not a fixed point but a series of variables which change with age. Chronologic age as measured by years and months is by no means identical with biologic age. Biologic age varies with each individual; there are many of us physiologically older than our elapsed years and a few of us physically younger than our chronologic age. Furthermore, no individual is of uniform physiologic age throughout; different structures and systems age at different rates at different times in the life span.

There is a common misconception that senescence implies decline alone. This is distinctly erroneous, for there occur compensatory increments in certain functional capacities. For example, as speed of reaction is lowered with age there occurs a compensatory increase in endurance. In athletic performance there is a positive correlation between success in competition requiring endurance and full maturity. The world records for sprints are held by very young men, but the records for the mara-

thon have been made by men well over 30. Far greater differences in endurance and reaction to exercise are found in persons in the same age groups than are observed between younger and middle-aged subjects. Loss of mere physical strength is often compensated for by increased skill and judgment. Though ambition may become less virile, pride in good work well done and the reestimation of values which come with maturity may compensate, particularly if an honest recognition of limitations is included in the mental changes of aging. It is not merely a coincidence that the engineers of the crack trains, that the captains of the most important ships and that the directors of the greatest industries are old men.

Abnormal senescence introduces the problems of those diseases whose incidence increases with advancing years, and in whose etiology aging plays some as yet ill-defined role. It is extremely difficult to draw a sharp line of distinction between normal and abnormal, especially as normal is not constant.

The socio-economic problems of aging arise out of the tremendously increased numbers of the aged in our population. This situation is wholly without precedent. Never before in the history of mankind has a community, race, nation, or a culture been faced with a population structure such as is developing today. These increasing millions of elderly people must either have the opportunity to work at occupations suited to their capacities, and thus to support themselves; or the proportionately dwindling group of younger individuals must support them in one way or another. The one answer implies productivity, the other rising and potentially destructive costs upon a group which may ultimately become a minority. Thus the problems of our aging people are of immediate and personal significance to everyone, as individuals or as parts of corporate industry, or of government. Industry is particularly concerned, not only because of its increasing share of the tax burden, but because of the increasing age of its own personnel. Manufacturing personnel directors have recently become aware of the implications in the fact that the average age of their employees is increasing at a surprising rate—almost a year per year in one immense organization.

The average age of workers will not diminish. The threat of war has already accelerated these problems, for youth is being called to military training. The emergency of increased defense production is demanding the recall of many older workers because of their skill and technical training. The practical problems of aging personnel are here. They involve both clinical medicine and personnel management. Much may be accomplished

immediately by the more conscientious application of existing knowledge, while awaiting further research into the fundamentals of the aging process.

Industrial medicine is faced with two major functions in connection with the aging of employees. The one is diagnostic, the other therapeutic. Medical advisors of employers must have certain basic information as to the physical condition of workers in relation to age before they can guide management wisely. The foundation of any effective program for the safe utilization and conservation of aging personnel is the *periodic health inventory*. The measurement of health is far more difficult and complex than the diagnosis of obvious disease.

There is no such thing as a perfectly healthy body and mind. *Health is more than the absence of disease*. It has quantitative attributes, involving reserve capacities. An adequate health audit requires much more than the usual superficial and hasty physical examination. A comprehensive, detailed history, routine laboratory procedures and stress tests to measure certain functional capacities are essential. The highest type of diagnostic acumen and intelligence to make sound clinical correlation of all the data are required for the proper evaluation of health. The medical examiner must know that normal is not fixed, but varies with age; and he must modify his interpretations of objective findings accordingly.

Thus, to conduct periodic health inventories properly requires more time, and therefore more money, than has heretofore been allocated. There are many who question the prophylactic and economic values of periodic examinations in industry. The objectors are of three groups: executives concerned with personnel management, physicians and laboring men. Physicians are perhaps the greatest obstructionists, for they are notoriously lax in applying the principles of personal preventive medicine to themselves. No doctor can be successful in health maintenance if he does not believe in it. Once he is convinced of its potentialities, he must apply it to himself first. Management and Labor both will acquire an increasing respect for this method of health maintenance if there be better application of the information gained by the inventory. All too frequently nothing comes of a periodic examination but a record on a card which is filed away. It is the quality of the *advice* to the individual and its conscientious application which determines the effectiveness of periodic consultations. Labor will be much less suspicious and resentful of periodic health surveys if it sees the direct benefits of better health. Management likewise is more prone to authorize the expenses in-

volved if there be greater assurance that the data will be *applied*. It costs money to train skilled workers and the value of employees increases with the years.

The second function of industrial medicine is therapeutic—health maintenance. Operating departments have inspectors to *find* flaws and defects in equipment and also employ service workers to *repair* these defects and maintain equipment at the maximum of efficiency. So should the medical service include health maintenance. Men, and healthy men, are the most important units in any organization.

The periodic health examination should not only *detect* defects; it should help *correct* them. Detection of defects or disease which make continued employment hazardous, not only for the individual but others, is an important function in safeguarding the operating personnel, the equipment and the public. But the major objective of periodic diagnostic study is to supply the data necessary for the formulation of sound health-maintenance advice. *Diagnosis exists for the purpose of treatment*. Industrial medicine has grown immensely since its beginnings as emergency traumatic surgery; now it begins to appreciate the potentialities of preventive medicine.

Preventive medicine may be either impersonal or personal. Industrial medicine should apply both forms. Impersonal or public health type of activities include sanitation, quarantine of communicable disease, the control of environmental hazards such as fumes, dusts and gases; insect vectors of disease (malaria control); and, lastly, mass immunization against certain infective diseases. The energetic application of these methods has contributed greatly to the magnificent improvement in the health of *youth* and the control of many occupational diseases. But such methods are wholly inappropriate to preventive geriatrics. In the first place, the effectiveness of public health medicine is limited to the prevention of diseases due to *exogenous* infective or toxic agents. Secondly, it is applicable only to relatively homogeneous groups where individualization can be minimized.

Preventive geriatrics, on the other hand, must be applied individually and personally. With aging comes increasing divergence from the mean, and a group of persons from forty to sixty-five is far more heterogeneous than is one made up of younger persons. Furthermore, the commoner diseases of middle and later life are largely *endogenous*. They arise from within. One cannot immunize people against hypertensive disease, arteriosclerosis, arthritis or cancer as one can immunize school children against diphtheria or typhoid fever.

The diseases of youth are usually readily detected. They are acute, conspicuous and self-limited. In later maturity the more frequent disorders are insidious, obscure, progressive and tend to chronicity. They must be searched for if they are to be detected early, when preventive therapy can accomplish most in retarding progression. All too frequently cure is beyond our present hope; no therapy will cure hypertensive arterial disease, arthritis, or coronary arteriosclerosis. But control is a feasible objective. The diabetic patient is kept vigorous and useful by adequate control of his disease, though he remains a diabetic. Similarly, hypertensive arterial disease is amenable to therapeutic control and its progression can be greatly retarded if individual management is instituted early. There are, and can be, no fixed routine methods of management for the progressive disorders of later years. Individualization is the keystone of the arch of prophylactic geriatrics.

It is vitally important to recognize that with increasing age individual variability increases. Individuality is a composite of inherited and inherent characteristics and the accumulative vicissitudes of existence. Generalities concerning babies are far more justified than generalities concerning the same individuals forty or more years later, for each and every person has accumulated a highly personal set of experiences, infections, intoxications and mental actions and reactions. The greater the age, the greater the individual variability. Though the baby knows nothing and the mature adult, if honest, may likewise admit knowing nothing, the latter should at least suspect a great deal.

There are many obstacles to the effective application of these ideas. As a clinician, I realize only too well the lack of methods of diagnosis for the early discovery of degenerative disease and the difficulties of therapy. Even under ideal conditions, no guarantee is possible. But the greatest obstacle of all is the inertia of mankind against practicing any form of prophylaxis. Personal preventive medicine involves personal effort on the part of the patient. Men resent restrictions. They prefer taking chances and then, when it is too late, demanding miraculous cures for the ills engendered by their own neglect. Prevention lacks the drama of cure. The benefits of prevention are revealed only statistically and statistics have little emotional appeal to the average mind. That personal prophylactic medicine is effective has been shown by the increased health and longevity of those insured individuals who have availed themselves of the periodic examinations made available by certain life insurance companies. However, it is notable that but a very small percentage of insured persons do

avail themselves of these opportunities for health maintenance.

This inertia can be overcome by education. This will take time and much effort. The first principle of pedagogy is to set a good example. He who does not practice what he preaches can not teach. *Health maintenance of aging personnel could start at the top*, for a number of reasons: 1) The acceptance of personal preventive medicine sets the necessary example; 2) key men, carrying the heaviest responsibilities, are the most difficult to replace; 3) the leaders are almost invariably older men, because experience, which is conditioned by age, is the basis for their valued knowledge and judgment; and 4) the higher average age and heavier burdens of responsibility are added menaces to health. Furthermore, it is probable that cooperation in attaining the high degree of thoroughness and individualization necessary to make personal preventive medicine for mature adults fully effective can be obtained more readily with the key men of an organization, because of their higher intelligence.

It is thus suggested that perhaps an effective means of overcoming the well-known resistance of Labor to periodic health examinations is first to make available the facilities for health maintenance, or prophylactic geriatrics, to the executive branches of the organization. Human nature being what it is, there is high probability that the workers will not be long in demanding that which they fought against.

Mention will be made of one or two other problems of management in connection with aging personnel. It has been, and still is, the custom to use chronologic age limits as criteria of employment and of retirement. This is grossly illogical. As previously pointed out, physiologic age does not necessarily parallel chronologic age. There are some men who age prematurely, even in the absence of disease, and who should be retired long before the prescribed chronologic age arbitrarily used as a standard. There are others in whom senescence is retarded and to whom senility never comes, whose vigor, intelligence and experienced judgment are retained long past the usual retiring age. To discard such men is to waste extravagantly valuable judgment and training. Such waste is stupid and stupidity is a luxury in which we can ill indulge now. The problem crystallizes into the question how physiologic age may be measured—a problem not solved yet; in fact, only just propounded. A vast amount of work is necessary before we can hope to develop methods for the accurate evaluation of physiologic age. No single criterion can suffice. However, the experienced phy-

sician does arrive at a general impression of physiologic age by that peculiar and indefinable something we call clinical judgment and which probably is the subconscious correlation of many different observations. Crude as such impressions are, in the precisely quantitative sense, they are, nevertheless, far more valid than arbitrary rules of retirement based on chronological age alone.

In job placement, thought must be given to the employee's future, as well as to his immediate capacities. Physical fitness implies not only the capacity to work but continuity of productiveness. Youth is molded with relative ease; with advancing years adaptation is more difficult. But it is not impossible. As previously pointed out, aging brings compensations as well as defects. Can not these compensatory characteristics be utilized? They can. It is not necessary that the aging mechanic or artisan whose speed is reduced but whose skill and judgment are enhanced be discarded or transferred to sorting bolts and nuts in the junk shop or to watching a gate. Such a transfer is equivalent to the judicial decision: "You are through—useless. You've worked hard and we'll feed you for it, but no longer may you feel pride in your work or have the precious satisfaction of feeling really useful." All of us know of intimate instances in which such premature retirement was but the herald of a death certificate. Under such blows even the best men quit. If, however, they may feel that they are sharing in the work to be done and are permitted to give their best, it is the best which is obtained.

Personnel officers frequently spend much time and money in attempting to insure the proper placement of a new employee. Psychological, physical and aptitude tests are used to guide the right man into the right job. This is fine, but often rather absurd. All too frequently, after much effort, the round peg is fitted carefully into the round hole and left there. Now the hole, or job, remains the same, but the peg, or man, does not. He changes with age. His capacities and limitations change, his perspective is altered, his interests, ambitions, loyalties and values shift with the years and as time goes on the original fit between man and job becomes more and more incongruous. Thus may arise many of the occupational neuroses which hasten the senescence of personnel management.

The employee of 60 and over has important potentialities as a teacher of new or younger employees. Industry is now suffering from an acute dearth of technically trained personnel. The education of apprentices and the development of finer skill, application of accuracy and pride of workmanship can well be a function of the older work-

ers. It is saddening to see the general lack of respect for the dignity of work in the younger generation. Perhaps our older men and women will welcome the opportunity to rekindle this vitalizing spark. Not satisfied to just get by, they can set splendid examples if given the chance.

SUMMARY

It has been impossible to do more than indicate some of the problems introduced by aging and emphasize the importance of prophylactic geriatrics in industrial health. Time, work and experience are necessary for the solution of these problems. It may be useful to recapitulate briefly some of the major ideas suggested.

1. The problems of aging are of immediate and serious concern to all leaders of mankind: physicians, industrialists, educators and statesmen. The shifting age of the population introduces economic and sociologic questions of great urgency. The vast numbers of elderly people will remain and increase.

2. Research into the fundamental processes of senescence is necessary for any great advance in the clinical practice of geriatrics.

3. We need to know much more about the changes in mental and physical capacities introduced by normal aging in man to attack intelligently the socio-economic problems now pressing for solution and to utilize wisely the increasing millions of older men and women.

4. The gravest hazard to national economy lies in the ever-increasing toll of prolonged disability exacted by the insidious, chronic and progressive disorders of later maturity. Longevity without health is not only a personal tragedy but a serious threat to national equilibrium. The privilege of longevity carries with it the obligation of personal effort toward health maintenance.

5. The primary objective of prophylactic geriatrics is not the prolongation of life, but the conservation of health for those past the meridian. To prevent aging would be to arrest life. But we may hope to modify the consequences of aging and retard the progression of diseases associated with senescence.

6. Personal preventive medicine, if properly and conscientiously applied, can do much to conserve health in later life. It must be highly individualized in both diagnostic study and therapeutic regimen to be effective. Senescence and the degenerative disorders of later maturity start far earlier than their symptoms become apparent. These disorders must be searched for if they are to be detected early enough to permit of accomplishing much in the way of prevention.

7. Health maintenance for older personnel is an obligation of industrial medicine. It is the obligation of management to encourage and support such activities in its medical departments. Industrial medicine is in a particularly advantageous position to advance preventive geriatrics, for industrial physicians have the privilege of examining and reexamining at periodic intervals many thousands of men and women.

8. The practice of health conservation among older personnel should start at the top. We must not forget that the wisdom of older men in positions of great responsibility represents an invaluable national resource. The conservation of the health of these precious individuals should be an integral part of defense activities. Furthermore, the stresses of responsibility are added menaces to health, particularly among the aging.

9. We are all aging. Aging does not commence when the hair starts to gray or farsightedness forces bifocal lenses upon us. Aging starts with conception and continues throughout life; it is a part of living. As the youth makes preparation for becoming an adult, so should the adult prepare for his later years. The time to seek medical guidance for the maintenance of health and vigor into the future is *now*.

FORCEPS—From Page 552

dilate upon its possibilities for usefulness, but for completeness of description I shall mention:

1. The ease, accuracy and rapidity with which ligatures can be passed through any tissue, at the same time crushing the structures and reducing the size of the pedicle, thus minimizing the dangers of hemorrhage and of slipping of the ligature;

2. The operator is not dependent upon the skill and dexterity of an assistant in catching the end of the ligature as in using any of the other carriers and needles;

3. The operator is enabled to pass the ligature easily and accurately through the desired structure unaided with one hand, while controlling in the same position the mass to be removed with the other hand—at times a very difficult procedure.

LIGATURES AND SUTURES OF DEER'S SINEW A CENTURY AGO

(Paul F. Eve, in *Sou. Med. & Surg. J.*, June, 1838)

A negro man with a large schirous tumor attached to the left tonsil was brought to me by Dr. Joseph Wardlaw of Abbeville village, S. C. A small tumour observed on the left side of the neck several years ago, within the last few months had rapidly increased in size till it weighed half a pound. The operation was performed in the Augusta hospital on the 1st of December, 1837.

By careful dissection, aided much by the light reflected from a mirror into the bottom of the wound, the tumour was detached from its connections, the last divided being

a fatty prolongation to the left tonsil. The left carotid and internal maxillary arteries, as well as the thyroid gland, were exposed. The ligature was applied to but two arteries, one being the superior thyroidal. The sutures were removed on the 7th, the sixth day after the operation, and the patient left the hospital on the 11th.

Extract from a letter of Dr. Wardlaw, dated Jan. 20th, 1838: "The boy Middleton, has entirely recovered, the wound healed very kindly, and has left a smooth and regular cicatrix. He is now in fine health, and greatly rejoices that he has gotten rid of 'the lump' as he terms it."

Remarks.—The ligature I employ is *animal*, made at the suggestion of Dr. John Bellinger of Charleston, of deer's sinew. I only employ them for *sutures* when I expect union by the first intention—applying in all cases *silk* ligatures for this purpose when suppuration is apprehended.

BORN WITHOUT ARMS—PERFORMANCES WITH HIS TOES

(Paul F. Eve, M.D., Professor of Surgery in the Medical College of Georgia, in *Southern Medical & Surgical Journal*, February, 1837)

This is written after witnessing the wonderful performances of a youth, during his visit to our city.

S. K. G. Nellis was born in Johnstown, New York, in March, 1817. At birth he was of the natural size and well formed, with the exception he *had no arms*. About two years of age, his spine became affected with rickets causing great deformity of the spinal column.

On each side where the arms should have been attached to the body, there is a small nipple, without an areola. The clavicles and scapulae appear to be natural, the acromion process projecting considerably outwards and anteriorly. His inferior extremities are well developed. The right foot is from a half to three-fourths of an inch longer than the left, which approaches somewhat the club-foot. This Mr. N. attributes to the left foot being turned on its external edge, in cutting paper, etc. and to his employing it to hold the objects upon which he operates with the right. With the big toe of either foot, however, he can throw a 6-pound weight five yards. He can also raise 160 pounds with his teeth. He says he now enjoys excellent health.

His performances with his toes are truly astonishing—strikingly exhibiting to what extent by art they can be adapted to the offices of the fingers.

With scissors in toes, Mr. Nellis will cut valentines and watch-papers, very ingeniously; and will also cut the likeness of any person very correctly.

He will make a paper fly-box, and fold a letter in the true-love style.

He will open and wind up a watch, take out and put in the crystal with perfect safety, open penknives, screw up his inkstand, lock his desk, etc.

With bow and arrow, he will shoot at a quarter of a dollar. This performance invariably astonished the beholders, by the almost unerring aim with which the archer uses his bow and arrow.

On the violincello, he will perform an accompaniment truly astonishing.

He will sing a number of songs, and conclude his exhibition with dancing a favorite hornpipe.

DR. PHILIP SYNG PHYSICK, born in Philadelphia 1768, University of Pennsylvania Professor of Surgery, the Father of American Surgery, died December 15th, 1837. "The Medical Societies of the United States resolved that all their members wear mourning for thirty days."—*Southern Med. & Surg. J.*, 1838.

An Automatic Ligature-Passing Forceps

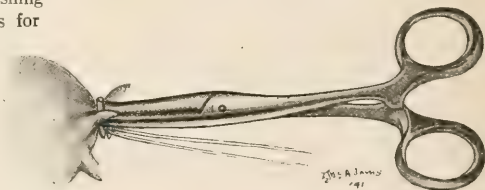
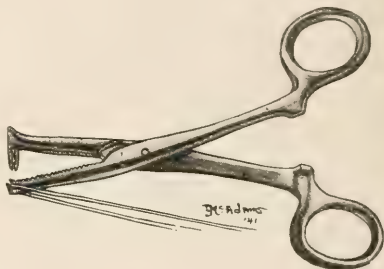
E. PIERRE MALLETT, M.D., Hendersonville, North Carolina

(EDITED BY LAURA JEAN McADAMS, M.A.)

THERE is such a multiplicity of new instruments or modifications of old ones constantly being thrust upon a patient and long-suffering profession that one hesitates to suggest another. The most enthusiastic and dextrous of surgeons would hardly care to say that he regards his methods and operative technique as having reached perfection, so that any instrument or method claiming to simplify and expedite the graver operations of abdominal surgery will, I am sure, be regarded with polite interest if not with enthusiasm. This instrument is designed for the passing of ligatures through any structure desired to be ligated and removed, but particularly those structures deep in the pelvis where it is difficult to use the needle or one of the ligature-passing devices available.

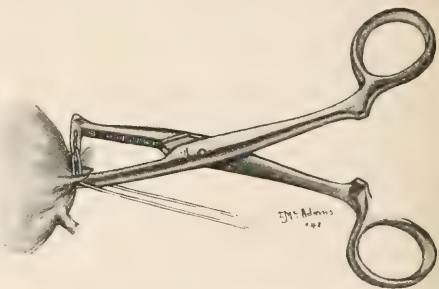
The greater advantages and additional factor for safety from crushing the tissues of any structure before ligating, as suggested by Dr. Murphy, became evident to us all, so that special crushing clamps were devised by Ferguson and others for

lower blade and pulled through the tissues by the needle in the upper blade—no fishing for the ligature to pull through as with the Peaslee needle or Cleveland passer. The ligature is caught with the closing of the forceps blades and is pulled through the tissue on the opening and withdrawing of the forceps.



this purpose. With most of us the crushing of the structures with an ordinary, heavy forceps and then tying the ligature in the groove thus made, has seemed satisfactory. In this instrument I have successfully combined these features, so that with one movement the pedicle is crushed and the ligature passed and is in position to be tied.

The *modus operandi* is simplicity itself. A ligature is laid in the groove in the lower blade, and the ends caught in the catch on the handle or held by the fingers of the right hand as the forceps is grasped for use as is any other forceps. The pedicle of the tumor, broad ligament, or whatever structure is to be ligated is grasped with the left hand. The open forceps, being in the right hand, is then applied in the same manner as any other forceps, crushing the structures within its grasp. It is held closed momentarily for the crushing effect, then opened and carefully withdrawn, when the ligature will be seen lying in the crushed groove, ready to tie, having been automatically caught from the



1. The instrument with ligature in position and ready to clamp pedicle.
2. Clamping pedicle to be crushed and ligated.
3. Pedicle clamped, instrument opened and partially withdrawn—showing ligature automatically passed through pedicle.

To those familiar with the class of work for which this instrument is intended, it is needless to

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Home Obstetrics*

WALTER J. LACKEY, M.D., Fallston, North Carolina

TEN YEARS AGO a North Carolina obstetrician said he was not interested in helping to increase the knowledge of general practitioners as to how to practice obstetrics in the home, because the only way to practice obstetrics for specialists in obstetrics to have charge throughout pregnancy and conduct all deliveries in hospitals. Maybe this would be preferable, though there's a lot of evidence to the contrary. Maybe it would be best for everybody to ride in Cadillacs; but they are out of reach of the great majority and this great majority ride just as safely and happily in Fords, Chevrolets and Plymouths, even though in some less degree of luxury. And the same principle applies to the conduct of obstetrical cases in the homes by general practitioners.

There's nothing but laziness to keep any one of us from making a good general physical examination soon after being retained in a case of pregnancy and having a Wassermann examination made, and in case of any doubt as to pelvic capacity, making pelvic measurements. Along through pregnancy we can make blood pressure readings and urinalyses at whatever intervals we think best, as a routine, with additional examinations whenever symptoms appear. Indicated dental care is insisted on, and care of the breasts and nipples.

The doctor whose practice is largely rural has fewer cases of vomiting of pregnancy. Our women are not so prone to show the three cardinal symptoms of pregnancy as given by an old Negro midwife: "The three '*ats*'—sick *at* de stomach, foamin' *at* de mouth, mad *at* de husban'."

It is no great labor to sterilize sheets, towels and dressings, or to have them sterilized at a nearby hospital, and to conduct the ordinary home delivery with as scrupulous asepsis and antisepsis as can be carried out in a hospital.

The bed should be raised to the desired level by putting a stout box or block under each leg, and kept from sagging by running a board crossways beneath the spring and over the side-rails. An instrument-bag with a copper tray long enough to hold forceps is standard obstetrical equipment.

The patient is instructed to take a soap-and-hot-water all-over bath, and a warm-water enema on the appearance of labor pains before calling me. I see no reason for shaving the genitalia and do not practice it. A gentle scrub for several minutes with hot water and green soap, a rinse with boiled

hot water, and another with lysol solution, is ample. A large sterile pad is applied and secured in place by a bandage, a sterile gown put on the patient and a sterile sheet placed under and another over her.

If much complaint is made of the pains in the first stage, I do not hesitate to give $\frac{1}{8}$ th gr. morphine, repeating as may seem indicated. My preference for partial anesthesia in the second stage is chloroform, a few whiffs taken as the pains come on, the light mask removed as they subside. I know of no trustworthy reports of ill results from such practice.

If everything has been found satisfactory at previous examination, unless there is some special indication, I do not make a vaginal examination at this time. The patient is encouraged to eat any wholesome food of her choice, especially sweets, in liberal quantities.

Nearly always the bag of waters is left to rupture at its own discretion. In only a few cases is pituitrin given and then in very small doses. A famous obstetrician used to say the most important equipment to take on an obstetrical case is a pocketful of good cigars.

As the perineum begins to bulge a fresh sterile gown and sheets are put on and the patient turned crossways on the bed, each thigh and leg supported on a chair turned down and a pillow laid on it. It is seen that the room is kept comfortably warm, and every provision made that the baby not be chilled. Very rarely is a forceps used before the head is right at the outlet. Then, in many instances such use hastens delivery and saves the perineum.

When it is seen that tearing is inevitable, episiotomy should be done. A clean cut placed just where you want it is much less of an evil than a rough tear wherever it may happen. The best place to make the incision is about an inch to one side of the lower end of the oval—at about what would be 5 or 7 on the clock's dial. The incision should be made with a very sharp knife in a downward and outward direction and it should be repaired immediately after the birth of the child. The best time to find out whether or not perineal tears have resulted is between the birth of the child and the birth of the placenta. In many cases the repair may be best made at this time. Use powdered sulfathiazol on the lacerations. I always have a good flashlight with me.

*Presented to the Fall Meeting of the Catawba Valley (N. C.) Medical Society, at Morganton.

Whatever the assistant obstetrician may say, you, yourself, must go over the child carefully for developmental defects and other things it would be embarrassing to have someone else call to your attention. A catheter and syringe should be on hand against the possible need for removing secretions from the air passages.

Until the afterbirth has come away and the mother had a teaspoonful of fluid-extract of ergot the mother should have the doctor's chief attention. Glucose solution and blood plasma should be available against the chance of excessive bleeding. Put silver nitrate drops in the child's eyes, and feel if it is tongue-tied. Somebody will ask you. Put the baby to both breasts as soon as it has been washed and the cord dressed. This stimulates uterine contractions. A pad over the uterus and a well-fitting abdominal binder may or may not help. I use them.

The mother has been previously instructed in the great advantages of breast feeding, even in these days of tin cans, better-than-natural foods and electric refrigerators.

Instructions are given that the baby have as much sweetened water as it will take after each putting to the breast.

Don't leave in less than an hour, no matter how well everything has gone. Routinely I pay four post-partum visits—on the second, the third, the fifth and the tenth day, more if the case requires.

It is advised in each case that the mother come in after two months for examination, especially of the cervix. Many lacerations will have healed of themselves. If there are any remaining showing eversion or erosion they are given appropriate treatment.

The vast majority of our families cannot afford hospital obstetrics by obstetrical specialists.

The vast majority of such cases can be well taken care of by their own family doctors in their own homes.

Against the possibly greater chance of infection in a home delivery, may be fairly balanced the likelihood that any infection in a hospital will be more virulent than one gotten in the home.

There's point, too, to this story:

A little New York boy came home after his first day in school and made this report:

"The teacher asked me a whole lot of questions. I got along all right until she asked where I was born. I wasn't going to tell her at the Woman's Hospital and let her think I was a sissy, so I said, 'At the Yankee Stadium.'"

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

VERY early in my practice I was called to see a 14-mos.-old baby in its home at 11:30 p. m. The immediate surroundings were anything but healthful. The air in the room was very bad. Seven people were in the room, and although it was a hot night in May, all the windows and doors were shut tightly. The child was wrapped in hot flannel clothing and drenched in sweat. The history showed that the child's appetite, sleep and bowel action were normal. Its urine was reported as scanty the day previously. The child was said to have had a convulsion in which it seemed to choke, a short time before I was called. His temperature was 103.6, pulse 190, respiration 40. The throat was negative except for much mucus. The flannels were removed despite protests that I would kill the baby. Heart, lungs and abdomen were negative.

Next I committed lese majeste, high treason or what have you, by opening all the windows and letting in good fresh air. Finally I ran all the neighbors out of the room despite my then youthful appearance. Then I stayed around for half an hour. At the end of this time I found the child's temperature 98.6, his pulse quieted down and the baby asleep, so I went home without giving a "prescription," much to the amazement of the parents, and, no doubt, to the multitude that had been assembled there when they heard of it next day.

Diagnosis: Heat exhaustion due to too much clothing and too little air.

Treatment: Simple hygiene.

Comment: What a horrible thing it would have been for that poor baby to have been dosed with castor oil, calomel etc. according to the customs that were then all too common in medical practice!

ON December 13th, 1925, I was asked by his employer to see a 55-year-old truck driver. On learning that he already had had a physician in attendance only the day before, I requested that he be called first, and then if he wished me to see the patient in consultation, I would do so. The employer was unable to reach the original physician on the case, however, so brought the man to the hospital and asked me to see him at once, and I did so. The family and past history were not contributory.

The patient complained of swelling of the scrotum. He stated that for over two years he had had a hard mass above and attached to the left testicle that had grown steadily and felt like a bunch of earthworms. Two days before I saw him, while handling some crates something seemed to

pop in the region of the mass, and it suddenly disappeared and was replaced by a soft fluctuating mass that filled the left side of the scrotum. There was no severe pain. He was constipated, but had no other gastrointestinal symptoms. He had a mild backache which he attributed to lying in bed for two days, and which was easily relieved by a supporting pillow under his back. His physician had seen him the day before and ordered hot cloths to the scrotum and said that if he did not improve he would tap him later. His employer felt, however, that some immediate action was needed, so brought him to the hospital. The history was otherwise negative. Physical examination was negative except for bad teeth and the condition in the scrotum. The left side of the scrotum was very markedly distended with what appeared to be largely fluid. The mass fluctuated, but did not transmit light. A mass that felt like a small bunch of earthworms was also present, presumably the remains of a varicocele. T. 99.6, p. 72, r. 20, b. p. 128/66.

Diagnosis: Hematocele due to rupture of varicocele. Dental sepsis.

Advice: Surgery, and later dentistry.

Outcome: Dr. J. T. Burrus was asked to see him. He agreed with my diagnosis and next day made an incision along the line of the left spermatic cord extending well into the left side of the scrotum. Two or three ounces of bloody fluid were evacuated. There was a ruptured varicocele, but also a ruptured hydrocele of the cord. A part of the sac was removed and the rest "bottled." The wound was drained. The patient later developed a septic temperature found to be due to a small scrotal abscess. This was drained and the patient made a slow but uneventful recovery.

INTRODUCTION OF THE CATHETER.—Mr. Liston introducing the catheter, or bougie, in all cases in which the obstruction was not seated near the orifice of the urethra, preferred the employment of one hand only, the urethra being left perfectly free; by pursuing that method the instrument was less likely to be impeded, the natural obstacles met with about the sinus of the urethra being more effectually and certainly avoided, the patient suffering less uneasiness, and the operation being altogether more easily and dexterously effected than when the member was pulled out and the urethra put unnaturally upon the stretch.—*Southern Med. & Surg. J.* (Augusta, Ga.), 1837.

The larvae of *Trichina spiralis* are killed at a temperature of 60° C. This temperature is not always obtained in the central portion of a large roast, after hours in a hot oven.

The syndrome which has been thought to be typical of clinical trichinosis probably occurs in a very small proportion of persons who become infested—the severest cases.

It is becoming apparent that mild or symptomless cases of trichinosis are far more frequent than are cases in which the typical syndrome is observed.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

NECROSIS OF THE HEAD OF THE FEMUR FOLLOWING DISLOCATION

A CAREFUL x-ray examination of every patient who has had a dislocation of the head of the femur will disclose an occasional case of necrosis of the head of the femur, even though the fracture was reduced immediately after its occurrence. Fortunately, however, there is usually regeneration of bone and, even with a considerable necrosis of the head of the femur, the patient may ultimately get a good result.

The reason for this necrosis is very simple. The blood supply to the neck of the femur comes from two sources: 1. The blood vessels of the round ligaments. These are not particularly large but the supply is sufficient. 2. The principal blood supply is from the vessels that come up from the neck of the femur toward the head.

In some dislocations, it is easy to see the blood supply that comes to the head of the femur through the round ligaments will be destroyed by tearing of the ligaments and destruction of the circulation at the same time. Another source of trouble is the injury to the blood supply coming up from the neck of the femur. The violence of a dislocation may tear one of the principal arteries in the area and thereby cut off the greater part of the nourishment from this source.

A combination of these two injuries to blood vessels will naturally cause great impairment to the circulation of blood to the head of the femur and it is likely that a necrosis will result, perhaps weeks or months after the accident.

The fact that these things do occur should be kept in mind and every patient who has a dislocation should have x-ray examinations at regular intervals so proper remedial measures may be instituted as soon as evidences of beginning necrosis are shown.

The fact that necrosis often comes on weeks or months afterwards and may be manifested only by pain in the hip joint itself is an important fact to remember.

SEPARATION OF THE NECK OF THE FEMUR FOLLOWING INJURY IN THE AGED AND INFIRM

I WAS CALLED in consultation a number of years ago to see an aged and very feeble lady who had sustained a fall several weeks previously and thought possibly she had injured her hip. A doctor was called, but none of the usual tests revealed a

fracture or any other bony injury. The doctor, however, used due caution and had an x-ray picture made by a competent man. Careful examination of this picture *did not reveal any fracture of the neck of the femur*. Some six or eight weeks afterwards, however, the patient developed pain in the region of this hip and remained in bed a few days. The doctor was again called and he noted a typical fracture of the neck of the femur which was confirmed by x-ray examination.

The relatives of the patient felt that the fracture had been overlooked but the doctor knew that it had not been overlooked. Since both x-ray films were available, I examined these very carefully and found that the first *did not* show any fracture or bony injury at all, even though the picture was so made that we could compare the two hip joints.

What had happened in this case was that the fall on the hip had caused some injury to the cancellous tissue and possibly to the blood supply of the neck of the femur, and this had been followed by necrosis and spontaneous fracture. An occurrence such as this has to my knowledge happened on a number of occasions.

A patient who is aged, and especially one who has been in bad general health for a long period of time, may have considerable absorption of the bony structure about the neck of the femur, so weakening it as to cause it to break when subjected to no more strain than that of slow walking. In addition to this, vascular changes, such as narrowing of the lumen of the blood vessels to the hip joint, may impair the blood supply, causing still further trouble. These two together may cause a necrosis of the weak part of the neck of the femur and result in the separation at the neck.

It is very important to keep this in mind because of the fact that many doctors in general practice have been called in to see patients who have sustained a fall and, upon making a proper examination, found no evidence of fracture, naturally and properly conclude there is none. As a matter of safety, however, every injury should be x-rayed when there is any indication of trouble. Even this may not show an injury to the bone, yet it will be a powerful factor in preventing criticism later on in case a spontaneous fracture occurs.

THE TREATMENT OF HEMORRHOIDS

The majority of adults have some sort of rectal trouble, usually hemorrhoids, often also a fissure.

The first symptom of rectal trouble is usually pain. However, it may first be manifested by slight bleeding or a prolapse of the hemorrhoids or rectal polyps. Sometimes rectal trouble is first evidenced by itching which may become very severe. Skin tags which become inflamed, or hemorrhoids

which become acutely inflamed, especially if thrombotic, may cause intense agony if allowed to go untreated. A fissure-in-ano, though very small, may be sufficient to almost drive a patient wild. Every complaint of rectal trouble should receive careful consideration and a very thorough examination.

The vast majority of rectal troubles can be diagnosed by simple inspection, palpation with the gloved finger, and a careful anal examination, using a rectal speculum and a good light.

When the first symptom of rectal trouble appears not only should a careful examination be made of the anal region, but if there are any subjective symptoms whatever a thorough sigmoidoscopic examination should be done immediately.

These examinations should not be done hurriedly, but carefully and methodically, and above all should be thorough.

The treatment of hemorrhoidal conditions should be attended to immediately. Delay causes the patient to suffer needless pain and may lead to considerable permanent disability, especially if complications occur.

In women we have other complications—such as possibly a torn sphincter ani muscle. There may be vaginal discharges which create irritation about the rectum and various other things may affect this area.

A thorough and careful examination will often disclose a number of conditions which must be corrected in order to effect a cure of the rectal complaint.

DIPHTHERITIC MYOCARDITIS

(A. G. Bower et al, Los Angeles, in *Med. Times*, Sept.)

Early circulatory failure occurs from the 2nd to the 9th day of the disease. The temperature is usually elevated; the pulse is rapid and thready; the heart is almost never enlarged; sounds forceful; a systolic murmur is frequently present; there is usually no disturbance in rhythm except as a terminal event; b. p. normal.

Late circulatory failure usually occurs from the 7th to the 14th day. Temperature may be normal or subnormal, vomiting is frequent.

Therapy in the early stages of diphtheria includes complete bed rest and constant nursing care, adequate dietary and vitamin regimen, dextrose by vein, and insulin.

In 1927 Gordon first used dextrose solution by vein routinely in early toxic diphtheria.

Although myocarditis has consistently been demonstrated clinically and at necropsy, in late circulatory failure evidence has been offered that it is not of primary consideration.

Heart stimulants such as digitalis are contraindicated. Pitressin the pressor principle of pituitary extract, is most valuable in late, of no value at all in early, circulatory failure. Blood pressure readings are taken and the drug is injected in amounts of 0.25 to 1 c.c. subcutaneously at suitable intervals until the blood pressure remains normal or higher than normal. During the past few years we have added adrenal cortex (eschatin) in doses from 10 to 20 c.c. in order to sustain blood pressure.

DEPARTMENTS

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

ON FREEDOM OF WORSHIP

LATELY I read in a newspaper a despatch from my native North Carolina, for which I have continuing affection and admiration, a statement that caused me distress. Two youngsters had been brought by their digressive conduct into the criminal court room. The Judge, after having heard the testimony, and probably after having hearkened to appeals for mercy, sentenced the boys to mandatory attendance upon Sunday school every single Sabbath Day for the next five years. And I fell to wondering if such a sentence might not be in conflict with that provision of the fundamental law that forbids unusual and cruel punishment. I doubt not that both the sentence of the court and their enforced attendance upon Sunday school will give them a distaste for such schooling. They may even resent the religious instruction proffered them within the church.

When I was unable to buy gasoline at a filling station in Morganton a few days ago because the time was 10:10 in the morning, I was momentarily bewildered. And then I made an interrogatory. The attendant replied that gasoline could not be sold from 10 to 12 in the morning on Sunday without violation of an ordinance of the town, which would result in a fine of fifty dollars. And I asked if the purpose of the particular municipal pronouncement was to enable the filling-station attendants to close their stations so that they might go to church, or if the purpose of the ordinance was to make it impossible for people to ride in the hope that if the wheels would not turn people would go to church. He was still scratching his head when I set forth for Richmond with a tank only partially filled with gas. But in John Calvin's own town of Statesville the filling-station youngster ran the gas-tank over and tried to sell me additional gas to be carried in a container. I surmise that Caledonian blood courses through his tubes.

I should like to have the opportunity for private communion with the youngsters for whom Judge Stevens suggested pabulum afforded by the Shorter Catechism and the Confession of Faith on each Lord's Day for the next five years. It may have come to pass, of course, that the boys have already induced His Honor to change the adjudgment to a term on the roads.

The law is as fond of punishing as a cat is of milk. Is the application of the punitive ritual often corrective?

DR. TOM WILLIAMS RETURNS

JUST as I was about to step aboard the train a few days ago some mail was given to me and on one of the letters I recognized instantly the kakegraph of my old-time friend, Dr. Tom A. Williams. When the day's labours had been concluded in New York—on the Lord's Day, too, it shames me to confess—I lifted up the telephone and I was delighted that his Scotch speech had no more changed than had his handwriting improved. On my way to the station I stopped at the Wolcott Hotel, and there we communed and talked of other days.

Dr. Williams remarked that we had not looked upon each other for twelve years. I told him that he had been lost to me for at least a decade. He said that he had been engaged most of the time in practice in Europe. When he spoke, perhaps a trifle complainingly of receiving no responses to his letters to some of us, I asked at once if he had penned the letters. Certainly, he would not type a personal letter. I made answer only for myself by reminding him that once when I was secretary of a medical organization I told him by letter if he were asking for a place on the program to speak to me through the machine. And he promptly sent to me a typed letter that was easily legible.

Dr. Williams has one of the most remarkable minds I have ever known. His memory is phenomenal in orderliness and in tenacity. His store of knowledge is so varied and so comprehensive that I have long thought of him as omniscient, both within and without the domain of medicine.

When he asked if I thought he might be able to obtain a position in a college in which he could teach mental hygiene, I wondered, of course, why he might not teach anything else in the curriculum. But his great store of medical knowledge and his acquired skill should be in daily use. He knows and he is gifted in the verbalization of his knowledge. He would be happy to hear from his friends of other days.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

ABSCESS OF THE PANCREAS

ACUTE PANCREATITIS is an acute diffuse inflammation of the pancreas which may differ considerably in degree. In favorable cases it terminates in resolution or in chronic pancreatitis, in unfavorable cases in diffuse necrosis of the gland. Because of its relative frequency and importance writers of this generation tend to attribute as a cause diseases of the pancreas which develop independently of it. Although abdominal apoplexy is caused by the rupture of an atheromatous arterial ulcer developing

upon arterio-sclerosis as a base, in the pancreas it is considered to be a symptom of acute hemorrhagic pancreatitis. This is true although the hemorrhage may not have been preceded by fever, leucocytosis, peritoneal exudate or any of the usual symptoms of acute inflammation. And a circumscribed abscess may develop in the pancreas as in any other gland without having been preceded by diffuse inflammation.

Two widely differing recent cases of abscess of the pancreas may be briefly cited to show that the condition is not necessarily a complication or a sequela of acute pancreatitis and that it should always be considered in the diagnosis of inflammatory lesions of the abdomen.

Case I—An ambulant white boy aged 4 had been taken a week previous to admission with pain about the umbilicus, nausea and vomiting. On examination a transverse tender mass in the epigastrium was thought to be an appendix abscess. At operation, however, fluctuation was found in the head of the pancreas from a circumscribed abscess containing thick, white, odorless pus from which staphylococci were identified. Uninterrupted convalescence followed drainage of the abscess. The appendix was normal in every way.

Case II—A fairly corpulent white woman of 70 years had had progressively deepening jaundice for a month before admission. There was no history of recurring pain suggestive of biliary colic from stone. There was leucocytosis and fever of mild degree. Because of the jaundice the dye for x-ray study of the gallbladder was not given. The pre-operative diagnosis was obstructive jaundice from cancer of the head of the pancreas or from stone in the common bile duct. At operation the gallbladder contained thick, tarry bile but was without stones and was grossly normal. The head of the pancreas was enlarged and indurated so that the terminal end of the common bile duct was mechanically obstructed by it. Because it was impossible to learn by palpation alone if an impacted gallstone was not obstructing the terminal common duct the head of the pancreas was opened and probed and no stone was found. The duct was compressed by a circumscribed abscess in the head of the pancreas. Thick, white pus containing staphylococci was evacuated. The gallbladder was drained to provide an outside escape for the bile until the inflammatory induration in the head of the pancreas would have time to subside and the normal passage of the bile through the common duct into the duodenum could be reestablished. If this does not occur anastomosis of the gallbladder to the intestine should be done.

In neither of these cases, even if the diagnosis had been suspected before operation, could it have been proven except by surgical exploration.

HISTORIC MEDICINE

ON THE USE OF METALLIC SUTURES AND METALLIC LIGATURES IN SURGICAL WOUNDS AND OPERATIONS

IT IS GENERALLY THOUGHT that J. Marion Sims originated the use of metallic sutures, certainly in surgical repair work. Here is abstracted an article¹ which shows how far from the facts this general idea is. This article is by the discoverer of chloroform anesthesia, Dr. James Y. Simpson, "afterward Sir James Y. Simpson, knighted for successfully delivering Queen Victoria, under chloroform anesthesia, of the seventh or eighth of her nine children. The good Queen took this effective means of silencing the clergy of the Anglican Church, who were (along with the great majority of the clergy of all other churches) denouncing anesthesia in labor as a sinful interference with the curse put upon woman, "In sorrow thou shalt bring forth children."

The idea of employing metallic threads for surgical sutures is not modern, however much the practice may be deemed so. In his learned dissertation on the *Acia* of Celsus, John Rhodius alludes to many different forms of thread, as the "*filum, lineum, laneum, sericum, xylum, aureum, argenteum, ferreum, plumbeum*." After speaking of the employment of gold and iron threads in the industrial arts, he alludes to the question of these two metallic threads being capable of use in surgical sutures; and, evidently without ever having tried them, he condemns them as unfit for such a purpose.

During the last century, however, metallic sutures appear to have been used, in some isolated examples. Purmann, "Chief Chirurgon to the City of Breslau, in Germany," as he is styled on the title page of the English edition of his *Chirurgia Curiosa*, used silver wire with alleged great advantage in wounds of the tongue. Needles of gold and silver were long preferred by most surgeons in applying the twisted suture for the cure of hare-lip. In his *Elements of Surgery*, published in 1746, Mihles speaks of employing silver and gold threads in the operation for hare-lip instead of pins, and figures a needle fitted to draw those metallic threads through the sides of the cleft lip.

The first surgeon in our own times who appears to have used metallic threads in practice, was the late Professor Dieffenbach, of Berlin. In a paper on *Staphyloraphy* published in 1826, he has detail-

1. By Dr. J. Y. Simpson, Professor of Midwifery in University of Edinburgh, in *Medical Times & Gazette*, London, June 5th, 1858.

ed several instances of that operation, in which he used leaden thread to unite the sides of the divided palate. He preferred for this purpose threads of lead to threads of silk, as he found the ends of the leaden thread could be made by mere twisting of their elongated extremities, to bring into contact the raw sides of the wound more easily than could be effected by attempting to tie and knot the end of silk threads by introducing the fingers so deeply within the cavity of the mouth. The metallic suture in staphyloraphy has been alluded to by many later surgical writers (and modified by some), as, for instance, Mr. Liston in 1831, Velpeau, Pancoast and others. Gosset stitched together the sides of a vesico-vaginal fistula with gold wire, the gold threads being left in for twenty-one days. In his *Practical Essay on Plastic Surgery*, Mr. Spencer Wells observes: "The lead suture is sometimes useful in deep operations. A piece of soft lead wire is armed at both ends with a short needle. These are passed, by means of forceps or a needle-holder, from within outwards, and the needles removed. The ends of the lead wire are twisted together until the wound is brought into apposition. They are then cut off. This is the easiest suture to apply in cases of vesico-vaginal fistula when deep-seated.

In the *British & Foreign Medical Review* for April, 1846, it is stated that platinum wire as a suture-thread has thus been "successfully employed at Guy's Hospital by Mr. Morgan." The late Mr. Bransby Cooper, in his *Lectures on Surgery*, published in 1851, when speaking of the treatment of common surgical wounds by the interrupted suture, observes that "the interrupted suture is the one more frequently used by surgeons and silk is the ligature generally used; but platinum wire is preferred by some surgeons." Again, Mr. Guthrie, when describing the treatment of wounds left by amputation, directs that "the common integuments of the stump should be drawn together in primary amputations by sutures formed of flexible leaden wire; by threads of silk, if leaden wire is not obtainable."

But in America the subject of metallic ligatures has met with more attention than in Europe. In 1832, Dr. J. P. Mettauer,¹ of Virginia, employed them with perfect success in operating in a very aggravated case of laceration of the perinaeum and rectum, produced the year previously by a long tedious labor. The laceration extended as high as three inches upwards, along the anterior wall of

the rectum. After removing and denuding the hardened edges of the lacerated cleft, and the parts exterior to them, Dr. Mettauer stitched carefully together the abraded surfaces with ligatures of lead wire. As the ligatures were applied they were tightened, so as to bring the abraded surfaces in contact; and then their ends were twisted together and cut off of convenient length. About twelve ligatures were required to close the wound. From time to time the ligatures were tightened by twisting them.

Four years after recording his first case in the *American Journal of Medical Sciences*, Dr. Mettauer reported six additional instances in which he had operated for extensive lacerations of the perinaeum. "In all of those cases," he states, "the recto-vaginal wall was completely divided, so as to convert the two passages bounded by it into one." Six of the operations were attended with complete success. In the seventh case, the wound partially tore open some weeks subsequently under the distention produced by the passage of "a large indurated mass of faeces, causing intense suffering;" and the patient had not yet submitted to a second operation for her cure. In concluding this contribution, Dr. Mettauer observes, "My experience leads me to believe that every case of the afflictive accident is completely remediable. I decidedly prefer the metallic suture in the treatment of this infirmity. With it we are enabled to close and confine the denuded margin of the fissure with more ease and certainty than with the silken or thread suture. And should the least gaping of the wound take place, a few twists of the free ends of the wires will enable us to close it up again. The leaden suture, too, does not cut out as soon as silk or thread."

In the same year (1847) in which he published this second essay on the cure of lacerated perinaeum with metallic sutures, Dr. Mettauer published an account of some cases of vesico-vaginal fistula which he had treated on similar principles. In his first case the opening in the back wall of the bladder was "fully the size of a Spanish milled dollar, and nearly circular." Its edges were denuded and brought together with eight leaden sutures; and after the extremities of these sutures were twisted and tightened, the opening was perfectly closed in every part of it. A short, light, silver catheter was permanently retained in the bladder. On the third day the wires were tightened, and again on the seventh. On the thirteenth day the ligatures were removed, and perfect union was found to have taken place along the whole line of contact. The cure was complete, and the woman bore two children subsequently without any return of the accident. Dr. Mettauer operated in five other cases of

1. Dr. John Peter Mettauer was a distinguished surgeon of Prince Edward Courthouse, now Farmville, in Southside Virginia. His fame rested largely on his success in a large series of operations for removal of cataract, and urinary stone, his cures of vesicovaginal and rectovaginal fistula and his conduct at P. E. C. H., of the Medical Department of Randolph-Macon College. It is said that no person ever saw Dr. Mettauer in life with his hat off, and that he had his coffin made extra long and was buried with his beaver on his head.—J. M. N.

vesico-vaginal fistula. In his second case the fistulous opening was diminished, but not obliterated, after eight operations. His results, however, on the whole, were so favorable as to induce him to conclude with the strong allegation, "I am decidedly of the opinion that every case of vesico-vaginal fistula can be cured, and my success justifies the statement."

Dr. Marion Sims, formerly of Montgomery, Alabama, now of New York, published in 1852 an essay on *The Treatment of Vesico-Vaginal Fistula* recommended the lips of the fistula, after they were refreshed by the surgeon's knife, to be held together by threads of silver wire used as a suture. Latterly a "Woman's Hospital" has been established in New York, principally for the treatment of fistulae and other injuries resulting from parturition; and Dr. Sims has, as surgeon to that institution, had ample means of proving the valuable and happy results of his treatment. Speaking of silver wire as a suture, he remarks, "From the day its wonderful effects were witnessed in vesico-vaginal fistulae in 1849, I have never used any other suture in any department of surgery; and I declare it (he elsewhere observes) as may honest and heart-felt conviction that the use of silver as a suture is the great surgical achievement of the nineteenth century."

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

VARICOSE VEINS AND ULCERS CURED IN OFFICE

VARICOSE VEINS AND ULCERS are prone to afflict the men and women who must be on their feet if they possibly can. Advice to stay in bed and keep the leg elevated will rarely be accepted.

It is a pleasure to read and to pass on to others a report¹ of excellent results from treatment of a large series of cases by a method requiring no hospitalization and keeping no patient from work for more than three days.

In the Surgical Out-Patient Department of the Medical College of Virginia, we average 35 or more such cases per afternoon. We inject the veins and treat the ulcers; when necessary we also ligate the veins—in either case allowing the patient to go home.

A careful history and examination determine the possibility of deep phlebitis. In women a pelvic examination should be done and if a tumor is found, it should be attended to before the veins are treated, and if there is a pregnancy only suppor-

tive treatment should be carried out until after the delivery.

The patency of the deep veins must be tested by applying an elastic stocking or Ace bandage and having the patient wear it for several days. If this support affords relief, treatment may be started. If the veins are only superficial and do not extend above the knee, injection is all that is necessary; if they extend above the knee or if the valves of the saphenous veins are incompetent, ligation must be done. Saphenous veins must be ligated high—all of the branches which enter the foramen ovale—and divided, or there will be a reflux of blood by their tributaries. If by the tourniquet test the valves in the communicating veins are incompetent, a second ligation may be necessary, either lower on the long saphenous vein, or on the short saphenous vein. These ligations may be carried out as office procedures, using novocain anesthesia. After the ligation the patient wears some kind of supportive bandage or an elastic stocking for several weeks. If the veins in the thigh are large, thread a ureteral catheter down the vein before the lower end is ligated and, while gradually withdrawing the catheter, inject several c.c. of the sclerosing solution into the vein. This will obliterate most of the veins above the knee and will reduce the number of subsequent injections necessary.

The injections are started one week after the ligation, or, if no ligation is necessary, as soon as it is determined that the deep veins are open. I have been using monolate (monoethanolamine oleate), injections of 2 to 5 c.c., three to five days apart. After each a small gauze pad is placed over the injection point and a supportive bandage is applied from the foot to the knee until all veins have been occluded, usually requiring from 4 to 12 injections.

The results have been gratifying. This method does not require hospitalization and never more than two or three days away from work.

We have done more than 150 ligations and 6,500 injections without any fatalities and with only four injection reactions. All of these came when a dose of more than 5 c.c. of solution was used. There has been no untoward reaction to my knowledge in the past 18 months.

When there is induration or ulceration, ligations and injections may be started at once unless there is spreading infection, in which case the patient should be put to bed and the infection treated. Ninety-five per cent of varicose ulcers can be completely healed by the simple use of elastic adhesive bandages. The remaining five per cent, with edema from the varicose veins and long-standing infection and resulting lymphangitis, require that all of the old ulcer with the scar tissue be widely excised

1. G. W. Horsley, Richmond, in *Bul. Richmond Acad. of Med.*, Sept.

down to normal muscle and fascia, a full-thickness skin graft used and the patient kept in bed until the graft has taken firmly. A well-balanced diet with sufficient vitamins is a requisite.

All of these cases should be followed from 12 to 18 months, and if any small recurrences are noted injections should be given immediately.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

THE CHARLOTTE TUBERCULOSIS CLINIC

THE Charlotte, N. C., Tuberculosis Clinic has been in continuous operation under the same medical supervision in connection with the Charlotte Health Department since September, 1919. Actually the clinic was a continuation of the Tuberculosis Dispensary of the North Carolina Medical College, the college having been discontinued in 1916. The need for institutional beds to care for active tuberculous cases has first recognized in the Dispensary of the Medical College, because of the large number of patients appearing there for examination and the rather high percentage of tuberculous cases in need of medical attention and hospitalization found among them. These institutional requirements were further emphasized in the work of the tuberculosis clinic immediately after its reorganization in connection with the Health Department, and it was with the clinic as a starting point that the movement began which eventually resulted in the building of the Mecklenburg Sanatorium. The clinic still operates as a feeding point for this institution.

For a good many years this clinic operated fairly successfully with very inadequate equipment, this handicap being due to the very limited funds appropriated for its use. That handicap has been to a large extent obviated because of the interest and generosity of the Charlotte Woman's Club. For the past five years this Club has appropriated each year money from their Seal Sale funds to add to our x-ray and other equipment until we now have everything needful. This added material includes a fluoroscope, a complete x-ray outfit for taking flat films and stereos of the chest, complete dark-room facilities, and the equipment necessary for pneumothorax refills. In addition to this, the Woman's Club has provided a sufficient number of films each year to supply our needs for the raying of the positive reactors in the tuberculin skin-testing of school children and the contacts of previously diagnosed active cases.

Since its organization in 1919 the clinic has been conducted two afternoons of each week, one afternoon of each month for the past several years hav-

ing been reserved for the skin-testing of children who are known contacts of previously diagnosed active adult cases. The regular clinic staff consists of one physician, one nurse, and a clerical worker. The physicians of the city are requested, if they so desire, to refer any patient who is unable to pay for the services of a physician and who may be in need of an examination, to the clinic for such a check-up. The district Health Department nurses are asked to send in suspicious cases who are not under the care of a private physician and to obtain sputum specimens for laboratory examination whenever it is indicated. By the latter procedure, we have been able to locate a number of virulently infectious cases that might otherwise have been missed. The follow-up of cases who are listed in the clinic records as observation cases, and who fail to return for subsequent checking, is handled by the district nurses, as is also the search for contacts and under-par children who might need attention.

The number of new patients examined yearly showed a gradual increase from 1919 until 1930, when the largest number, 765, were recorded. Since 1930, the new registrations have remained fairly constant, the number in 1940 having been 604. In 1930 of the 765 examined, 91 were diagnosed as active tuberculosis; in 1940 of the 604 examined only 32 were pronounced positive. The following total figures will give an idea of the volume of work which has been done in this clinic since its opening to the present time.

Total No. new patients examined....	16,180
" " visits to clinic.....	23,304
" " active cases diagnosed....	1,745
" nurses' field visits.....	57,480

An item of interest, and an indication that the work in prevention of tuberculous infection has achieved results, is the fact that of those patients examined in 1921, 46.4% were active tuberculous cases, while in 1940, of the 604 examined, only 5.3% were active cases. Since the construction of the Mecklenburg Sanatorium all cases judged to be in need of institutional treatment are urged to go to the institution for treatment, and applications for entrance are filled out for them in the clinic. The follow-up work for discharged sanatorium cases is also assumed by the clinic if it is desired.

In 1936 the yearly routine tuberculin skin-testing of school-children was added to the outside activities of the clinic staff. This has been valuable public health tuberculosis work, as the investigation of the environmental conditions surrounding the positive tuberculin skin-reactors has assisted us in locating many open sources of infection. These clinics have been conducted in grammar grades and high schools of both the white and colored

schools. That this activity is a necessary part of our tuberculosis work we are assured, and it will be continued each year as far as our finances will permit. The following figures will indicate the amount of this work that has been done in the last five years. All positive skin-reactors are x-rayed in the clinic, and an attempt is made to repeat the x-ray examination at least once a year in every case diagnosed as a primary tuberculous infection.

No. of school-children skin-tested.....	11,952
(Includes 8,019 whites and 3,933 Negroes)	
Positive reactors x-rayed.....	1,162
Primary lesions diagnosed (active and latent)	297
Adult type disease (2 white, 4 Negro)...	6

That the work in prevention of tuberculous infection has had some effect is indicated by the gradual yearly reduction in the percentage of positive reactors both among the white children and the Negroes. In the first year this work was done the white children showed approximately 16% positive reactors, while in 1940 this percentage was 8.1. In 1936, 518 children of one Negro school showed 34.5% positive reactors. In 1941, 569 children in this same school showed a percentage of positives of 13.57%—much less than half that of 1936. In addition to the 1,162 positive skin reactors among the school-children, we have x-rayed in the last three years 502 positive reactors among contacts of known active cases, a total of 1,664 x-rayed cases.

In January, 1940, recognizing the fact that such a department would be of great help to many discharged sanatorium cases, we added an artificial pneumothorax division to the clinic. Since its opening 320 artificial pneumothorax refills have been given in this department. This service is available for any discharged sanatorium patient who has been getting this type of treatment and who desires the service, provided that such patient is financially unable to pay for it.

Although we are much better equipped at present than we were some years ago, due to the interest and generosity of the Charlotte Woman's Club, we are still somewhat handicapped financially. One of our principal needs is a sufficient number of trained nurses for field work in order that we may accomplish more effectual follow-up work, particularly among the children who have been found with active or healed primary infections, and in the tracing of contacts of known active cases.

CESAREAN SECTION.—Probably a dozen different cases and times are cited by different writers as "the first successful cesarean section." Much of this diversity of statement hinges on the meaning intended.

DERMATOLOGY

J. LAMAR CALLOWAY, M.D., *Editor*, Durham, N. C.

RECURRING APHTHOUS ULCERS OF THE MOUTH

RECURRING superficial ulcers affecting the mucous membranes of the lip, mouth and tongue constitute one of the most difficult diagnostic and therapeutic problems with which we have to cope. Fortunately for the patient, in most instances the lesions are few and recur infrequently. However, there is a group in which some lesions are present almost constantly, at times being so extensive and painful as to cause the patient to be unable to take fluids or foods without extreme discomfort.

Most common causes for lesions of this type are—

1. Recurring herpes
2. Vitamin deficiency (particularly of the vitamin B complex)
3. Electrogalvanic ulcers
4. Food or drug sensitivity
5. Contacts due to various dentrifices, artificial plates, mouth washes etc.
6. Endocrine disturbances.

From my observation recurring herpetic ulcerations are the most frequent causes of shallow aphthous ulcers of this type and if observed early in the course of development almost always the primary lesion is a group of vesicles on an erythematous base, which rapidly becomes eroded and forms a shallow ulcer, that the patient usually observes first and for which he seeks relief. The best method for building up virus immunity is by small-pox vaccination, repeated until a satisfactory "take" is obtained.

Although the dietary intake of vitamin B complex may be adequate, since some individuals do not metabolize vitamin B satisfactorily, deficiency of this vitamin is one of the frequent causes of superficial ulcerations of this sort, and all such patients should receive adequate dosages of the B complex. A satisfactory way of administering it is by using one tablespoonful of brewer's yeast in tomato juice three times daily.

Lain described electrogalvanic lesions of the mouth occurring in patients with dissimilar metallic fillings which produce a mild electrical current. Lesions of this type can as a rule be detected fairly easily because of their close proximity to fillings. This factor should be considered in all patients.

It is very rare that specific food or drug ingestion produces ulceration of this type; but this factor, too, must be kept in mind. The patient can satisfactorily eliminate most of his food or drug factors by keeping a careful diary for a period of a

month and checking this against the appearance or recurrence of lesions. Intracutaneous skin tests to various foods are also sometimes helpful.

Dentrifices, mouth washes, artificial plates and other contact substances can usually be eliminated by history; the use of patch tests and local applications will assist in the evaluation of these factors.

Moseley has recently reported a case in which endocrine therapy was required in order to effect cure of recurring ulcerations of the mouth and vulva. It should be stated here that vaginal mucous membrane is frequently involved in the same manner and degree as the buccal.

Since these problems are so hard to manage it is advisable in most cases to use smallpox vaccination and large doses of vitamin B complex, to proscribe dentrifices and substitute a plain saline mouth wash, and to impress on the patient the necessity for careful coöperation in keeping a diary to determination of any food and drug sensitization. If these fail then intradermal skin tests, endocrine therapy etc. are indicated.

INSURANCE MEDICINE

HYPERTENSION PERSONALITY

For this issue A. RAY DAWSON, M.D., Greensboro, N. C.
Assistant Medical Director Jefferson Standard Life
Insurance Company

HYPERTENSION with its camp followers, coronary diseases and cerebral accidents, is today number one on the insurance companies' list of diseases causing economic loss. As is well known, these diseases kill and kill quickly in the middle forties and beginning fifties, at the very peak of man's economic productive capacity.

In the early twenties, insurance statistics portrayed the picture of coming events. In December, 1925, Dr. Edwin W. Dwight, Medical Director of the New England Mutual, wrote a classic on circulatory deaths, titling his paper "The Next Job in Preventive Medicine." The following is quoted from his summary: "The incidence of circulatory diseases is in inverse relation to the amount of physical exercise which the group takes in the open air; and, other things being equal, it is in direct relation to the amount of nervous and mental strain."

Prior to the twenties, there was born, later to be invested with vigorous growth, the term hypertensive personality. This vague term is now an important part of our medical thinking. We all know something of its meaning, but like that eel caught off the Carolina Coast, it seems to slip away from us when we have the most stable ideas on the subject. However, in the manner with which the experienced fisherman holds the eel bet-

ter than we amateurs, some of our professional associates give us thoughts which cast light on certain features.

In dealing with pathological personalities, we have come to recognize two distinct reactionary types, each of these types react to environment in a more or less certain and oft-times predictable manner. The pattern seems to be basic in the individual's nature. The psychologist has termed these two classes of persons as introverts and extroverts. The psychiatrist gives us an example of introversion, the psychosis, dementia precox, in which low blood pressure and weakness toward the infectious diseases, particularly tuberculosis, are frequent findings. He also gives us an example of extroversion, the paranoid or maniac, depressive psychosis, in which high blood pressure and circulatory diseases are the most frequent findings. We know that certain people react to environment in a regressive or "getting-away-from" manner, while others walk in and start fighting. Even at this time, when such a premium is put on the fighting side of our nature, it seems not to be such a good idea when one considers individual longevity. Many of our great thinkers have said that beauty and rhythm are the objectives in life. I believe that we can now get a glimpse of the truth which they spoke. It is not the man who gracefully and rhythmically executes the latest steps who gets hot under the collar when social custom dictates that he dance with the hostess or the lady of the evening. No, it is those among us who seem to awkwardly stumble through the ordeal. It isn't the player with the rhythmic drive who on the golf links throws down the club and cracks the air with verbal utterance. It is that other fellow who was frustrated in his execution. The psychoanalyst tells us that frustration in the extrovert or fighting personality is the basis for emotional hypertension. The introverts who are frustrated react in a "drawing-away-from" manner, and are usually the neurotics. The psychiatrist and the psychoanalyst have treated some cases of hypertension and from them we get the following: Every thought has an energy component. If this energy component does not find vent in physical activity or the belief that this dynamism has been carried through to completion, there is a build-up of energy within the human organism which is manifested by high blood pressure, irritability and a general reaction on the part of the individual to get done quickly the thing that he is about, for his unconscious is constantly calling him back to complete a drive which is, as yet, unsatisfied.

Ayman compared a large group of hypertensive individuals with those with normal blood pressure. He found statistically that the hypertensives were

impulsive, high-strung, quick-tempered, sensitive individuals who were fast walkers, fast workers and fast eaters with large appetites. They eat more, they drink more, they smoke more, they do more. The hypertensive is an individual who has put into his work a great deal of time and effort. He will impress you with the fact that he knows all the answers and he usually does. In the big business organizations, it is rare that we find hypertension among the presidents. It is the vice-presidents or the executive managers who seem to fall heir to this disease. It is the business man who Dr. Allen of Mayo Clinic says is trying to beat the escalator. In talking to these people, I have been impressed by what I wish to call their conversational short-sighted point of view. Dr. Allen puts this on a broader scale and classes the feature "a failure to define objective." So frequently these persons are not willing to listen. This one fact presents the greatest problem in therapy. Their mind seems to be blocked to outside knowledge. They must arrive at conclusions for themselves. In an argument, the objective seems to be to convince one of their point of view, not to get to the truth of the subject. During life insurance examinations, these persons display a feeling of irritation. They assume the attitude that they are completely well and that the examination is a necessary evil. They are prone to under-estimate the severity or importance of the few diseases which they have had during their lifetime, and they usually have had but few. I have never felt that they attempted to falsify any knowledge but in general they give one the impression that a physical examination is an unnecessary loss of time from their daily activities. To obtain from them a clear and concise history plus cooperative physical examination is one of the hardest problems facing the examiner. The hypertensive is so prone to forget, pass over or belittle that slight pain in the chest while hunting last fall or that attack of "indigestion" when he was at the convention last summer.

He is a sensitive, head-strong individual. He doesn't go to the doctor and cry on his shoulder every time he has a little pain or indigestion. Sissies and weaklings do that. When he says "Oh! it was nothing but indigestion; I was drinking a little and eating too much. I took a couple of doses of soda; felt fine the next day." He doesn't want to talk any more about it. To get a clear, concise remainder of that history is a challenge to the examiner, but so important to life insurance companies. It means the difference between a normal life expectancy or a life expectancy of but a few years even though the physical findings today are normal. They require extra time while examining. Why were those tonsils removed after reaching

manhood and the teeth in the late thirties or early forties? Why that examination by Dr. Doe? Why that unusual vacation? Remember they are hard workers who keep their "nose to the grindstone" and any unusual thing that took them away is worth looking into.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

WHAT PERCENTAGE OF PEOPLE ARE AWARE OF THEIR VISUAL DEFICIENCY?

ONE who is engaged in the daily practice of examining eyes must be impressed with the large number of people who have little knowledge of their visual loss, or in other words, how poorly they actually see. The number is fairly large when the problem is considered from the viewpoint of the whole population from early childhood to old age; when this group is broken up into age periods, into educational, social and economic classes, the number in certain of these groups is seen to be amazingly high. It will be understood that this is not a discussion of the percentage of visual deficiency in the population, but is an approximation of the number of people who are not aware of any appreciable visual deficiency although it may be considerable when reckoned upon the percentage standards of visual efficiency.

Vision is said to be normal when a person can read 20/20 on the Snellen's test chart. This is equivalent to a visual efficiency of 100 per centum; but there are a larger number of people who read 20/30, 20/40, 20/60 and 20/100 or slightly less who carry on their daily work oblivious of the fact that they have any limitation of visual acuity. To those of us who work in the field of the eye and to many others this situation may appear impossible of existence. Offhand, it might be assumed that a person should know if he does not see within the prescribed limits of the so-called normal, 20/20. Yet, the occasion arises often in the process of an eye examination wherein a patient will emphatically state he has no difficulty in seeing and it is found by testing that his vision is 20/100 or less. This is more often the viewpoint of the patient particularly if he has good to fair vision for near work. This is likewise often true when vision in one eye is good and the other blind or nearly so that the patient is oblivious of the fact that he is blind in one eye until it is brought to his attention by accident or by a visual test.

In grouping these cases it is found that a large number of children of preschool and school age up to 10 or 12 years of age may not realize their visual disability until it is noticed by their teacher or

parents or others. This is particularly true in the low-grade simple type of myopia where the condition began at an early age and progressed by slow advancement. The same is true in simple hypermetropia of the adult where the condition is insidious and until near vision becomes blurred at the age of presbyopia. In the better educated group, and among others who use their eyes largely at close range, clear vision for distance to many of them is not a consideration. They are primarily concerned with near vision. Of those in the lower economic and social scale, who use their eyes largely to determine their position in space and with respect to their daily environment, the majority have little conception of very great visual loss as we understand visual efficiency. The majority of these people have few if any symptoms as result of the refractive error or of the pathological changes responsible for the visual loss for distance, and apply for help only when the period of advanced presbyopia supervenes.

The problem that confronts us here is what to do about the adult who is unaware of his visual defects, and who, in his activities on our motor highways and in our industrial plants, becomes a menace to himself and others. Corrective methods have long been known and proposed but regulation and enforcement are still wanting.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

CAUSES OF CANCER

NEXT in human interest after the question: If a man die shall he live again?, probably comes: What is the cause of cancer? Few important questions are susceptible of categorical answer.

Rous¹ goes into the causation of cancer in a very helpful way.

Men never tire of discussing the relative shares of heredity and environment in making the individual what he is. It has been shown that the tendency to tumors can be bred in or out of animal families at will, and the purposeful utilization of carcinogenic (cancer-producing) agents to produce cancer has established the importance of some of the factors which determine the disease.

High in the list is the presence in the tissue of potentialities for tumor formation. The animal body possesses such potentialities in enormous number, differing in character with the species, and individuals of the same species but of different familial strains. Liability of an individual to this or that sort of growth depends first upon whether his tissues possess potentialities of the sort from

which that certain growth may derive. They are familial; but whether they are actually inherited is still unsettled. The potentialities of some strains of mice to have mammary cancer are conferred after birth, reaching the young animals by way of the mother's milk.

In order that a tumor potentiality, of whatever sort, may give rise to a growth, it must be worked upon by one or another of the many agents which we speak of as carcinogenic. They might better be termed oncogenic (tumor-producing) agents, since they act to change normal cells into sarcoma cells, endothelioma cells, leukemia cells, and so forth, as well as into cancer cells.

Often the cell that has been converted into a tumor cell by a carcinogen becomes at once a going concern; it proliferates and a benign or malignant growth is the result. But in many cases the cell, though rendered neoplastic, requires aid if it is to assert itself.

Intercurrent infection with bacteria often makes a cancer more malignant. Recently it has been found that secondary infection with a virus causing cell proliferation may convert benign tumors (of unknown cause) into malignant tumors; also that such infection may cause growths that are primarily cancerous to grow much faster and assume a different form.

Cancer is almost always the consequence of many conditions and circumstances working together for ill. The omission of a single one of these factors may mean that the disease will not occur. In such instances the missing factor must be regarded as the determining cause of cancer. Yet though this is the case it can not be deemed the actuating cause of the tumor. Given all necessary determining, contributing conditions, what makes a cell a cancer cell? To trace down in the individual case each and all of these responsible influences should be the aim of laboratory worker and clinician alike.

The great number of agents now known which cause cancer, compared with one another, are seen to be widely diverse in character, having little in common except their results. Yet one can often be substituted for another during the long process of eliciting cancer, or their actions can be summarized, facts which indicate that they work in the same way on the cells they render neoplastic. Yet they are notably non-specific. Acting upon different kinds of animals or upon those of one kind but of different familial strains, they call forth tumors characteristic, not of the carcinogen, but of the species or strain. Some of the hormones, when present in excess, may bring about changes in the tissues on which they act which result in cancer.

¹ Peyton Rous, New York City, in *Jl. Mt. Sinai Hosp.*, Sept. Oct.

Yet while substances formed within the organism may call forth tumors, it does not follow that they are the intrinsic cause. Indeed the evidence is against this.

All of the carcinogens except the tumor-producing viruses vanish from the growths they have engendered as these enlarge, and from the tumor tissue nothing resembling them which will directly produce cancer can be extracted. The generality of the carcinogens act indirectly by producing chronic tissue disturbance on the basis of which tumors may arise; but they do so only if the tissue in question possesses potentialities for their formation, these differing with the species and the family. None of the potentialities would ever become a reality were it not worked upon by one or another of the numerous agents, existing in nature or produced in the laboratory, which have the ability to evoke tumors. The agent, having done its work, disappears from the scene.

The action of viruses to evoke tumors is of quite another kind. The neoplastic viruses are not dependent for their effects upon such tumor potentialities as the tissue may happen to possess but they provide their own, directly inducing neoplastic change of the cells upon which they act and determining the kind of tumor that results. They accompany the cells which they have rendered neoplastic as these multiply into tumors, increase in amount in association with them, go along with the tumor tissue when this is transplanted into new hosts, and can often be recovered from it in a state to produce tumors of precisely the same kind on introduction into other individuals. When they can not be recovered, their presence can be demonstrated obliquely, as for example by serological tests.

Though only a few tumor-producing viruses have been discovered, they command attention as constituting the only direct causes for neoplasms that are now known. The sporadic incidence of human tumors decisively rules out the possibility that they are consequent upon the direct transmission of viruses from individuals carrying them. The liability to mammary cancer of some strains of mice is conferred on the suckling young by way of the milk; and evidence has accumulated that the animal body contains resident viruses, just as it contains resident bacteria, which ordinarily do no harm. These viruses gaining entrance to the body, perhaps shortly after birth, may persist in association with the cells of this or that organ, and produce no injury unless subjected to exceptional conditions such as the influence of the carcinogens can provide.

That this much of a positive character has been learned about cancer, causation is indeed encour-

aging. With this knowledge we can give an answer to those who inquire petulantly: Why is it you doctors have never found out anything about cancer? And with this knowledge we can save the lives of some of our patients by cure and of some of them by prevention.

CLINICAL CHEMISTRY AND MICROSCOPY

For this issue W. C. THOMAS, M.D., Winston-Salem, N. C.

A SIMPLE TEST OF CALCIUM UNBALANCE IN THE BODY

THE diseases involving disturbances in calcium metabolism in the body have been investigated by a great number of men during the past decade. Calcium, phosphorus, parathyroid hormone, phosphatase, Vitamin D, and serum protein have all been the subjects of unnumbered experiments. The literature has abounded in presentations of the results of the work.

With the advance in the experimental phases of study, clinicians started to apply the comprehensive methods worked out upon some of their obscure and distressing problems. The results were promising. One investigator, for example, found that from three to five per cent of renal stones were caused by hyperparathyroidism and that curative therapy should be directed at the parathyroid glands. Other equally persistent conditions were found to be based on calcium imbalance. So it behooves us to seek out means of diagnosing this underlying pathologic state.

Unfortunately, because of inadequate chemical laboratory facilities or because of the desire to spare the patient the added expense of such an examination, there is a tendency to forego complete diagnostic study in disorders of calcium metabolism. And perhaps justifiably so because of the expense and technical difficulties involved. Recently, however, in reading one of the newer books on endocrinology¹, I found mention made of a test which places in the hands of every practitioner a valuable weapon for his diagnostic armamentarium.

The test was described by Sulkovitch and it bears his name. It depends upon the fundamental fact that variation in the level of the blood calcium is reflected in the renal excretion of the substance in the urine. So a high calcium content of the blood is revealed by a high calcium content of the urine.

THE SULKOVITCH REAGENT

Oxalic acid.....	7.5 grams (dissolve in water)
Ammonium oxalate....	2.5 grams (dissolve in water)....
Glacial acetic acid....	5.0 c.c.
Water q.s. ad.....	150.0 c.c.

The solid constituents should be dissolved in water separately and then the entire amount diluted with water to 150 c.c.

THE TEST

Add two cubic centimeters of freshly voided urine to an equal amount of the reagent as prepared above.

INTERPRETATION

Fine White Cloud—indicates a probable normal level of the blood calcium—between 9-11 mgms. %.

Heavy White Precipitate—indicates a probable level of the blood calcium over 11 mgms. %.

Failure of a Cloud to Form—indicates a level between 5-7.5 mgms. %.

USE

1. *In Diagnosis:* In those patients suspected of having an upset calcium metabolism in which an inexpensive and easily performed determination of the relative status of the blood calcium is desired. The finding of an altered state is then an indication to bring into play more extensive studies.

2. *In Following Therapy:* Where a potent drug such as dihydrotachysterol is used to elevate the blood calcium, it is very important to avoid any abnormal rise in the blood calcium, level. The Sulkovitch test is a very simple method of doing this. It is quite simple to instruct the patient in its use so that he may safeguard his course of therapy.

1. Grollman, A., *Essentials of Endocrinology*, J. B. Lippincott and Company, 1941

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

MASSIVE-DOSE ARSENOTHERAPY OF EARLY SYPHILIS BY INTRAVENOUS DRIP METHOD

THE accepted method of treating syphilis is long-continued and expensive. The long period of treatment makes it next to impossible to keep the fact that a certain individual has syphilis a secret; or to effect more than a haphazard check of spread of the disease. A method of rapid cure which would sacrifice nothing of safety or effectiveness would be a boon to society.

Promising results are reported¹ from treatment of a large enough number of patients over a long enough time to carry weight.

Group 1, studied in 1933, consisted of 25 patients, who were given an average of 4 Gm. of neoarsphenamine over the course of five days.

Group 2, studied in 1938, comprised 86 men treated in the same manner.

Groups 1 and 2 constitute the neoarsphenamine series of 111 patients.

Group 3, studied in 1938 and 1939, included 157 patients. These men received mapharsen in doses varying between 400 and 1,100 mg., average 700 mg.

Group 4, 118 patients treated late in 1939 and early in 1940, received 1,200 mg. of mapharsen. Four are also reported in the neoarsphenamine series. They were re-treated with mapharsen: 3 for

reinfections and 1 for infectious relapse.

Neoarsphenamine was abandoned because of a fatal complication of treatment and the high incidence of peripheral neuritis.

In the earlier mapharsen group, the frequent occurrence of infectious relapse and the low incidence of toxicologic manifestations led to a gradual increase of the dose. The initial amount of 400 mg. was increased to what seemed a safe and optimal total of 1,200 mg. administered over the course of five days. Group 3 includes the patients who were given less than the optimal, safe dose of 1,200 mg. Group 4 includes all who received the optimal amount.

The ages of the patients varied from 13 to 56. Forty-six (12%) on admission were in the seronegative primary stage. The diagnosis of syphilis in each of these was established by dark-field examinations.

In a series of 382 cases there was 1 death from treatment. No deaths occurred with mapharsen. The minor toxicologic phenomena included local reactions, primary and secondary fever, toxicodermas, nausea and vomiting. Peripheral neuritis occurred in one-third of the patients who received neoarsphenamine, in a negligible number of mild paresthesias in the mapharsen series. Of the grave phenomena only the cerebral symptoms were encountered in 1.8% of the neoarsphenamine series and in 1.1% of the mapharsen series.

Classifying as unfavorable all questionable results, we find that 81% of the patients had a completely satisfactory course. Including favorable results from re-treatment in an additional 15 cases, the total number of satisfactory results approximates 88% for the entire series. With a single exception, the spinal fluid of every patient has become completely clear.

With the exception of the infectious relapse at the site of the original inoculation, no organic manifestation of syphilis has been noted. The patients of series 1 were re-examined at the end of five years, and many of the patients of series 2 have passed three years of observation.

The irrevocable failures approximate 5%. A definitive policy for re-treatment might have appreciably lowered this percentage.

The treatment of the 41 patients with seronegative primary syphilis, 2 of whom were re-treated with massive dose of arsenotherapy, was 100% satisfactory.

POLYEMBRYONY of the development of more than one embryo from a single egg is a characteristic found in varying degrees in many groups of animals. The identical twins, triplets, quads, quintts, and sextuplets of man are representative of this phenomenon. Polyembryony, however, attains its climax among the ants, bees, and wasps.—*Ciba Symposia*.

1. Wm. Leifer et al, New York, in *Jl. A. M. A.*, Oct. 4th.

SOUTHERN MEDICINE & SURGERY

Official Organ

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As is true of most Medical Journals, all costs of cuts, etc., for illustrating an article must be borne by the author.

INTERESTING AND INSTRUCTIVE BITS
FOUND IN ABSTRACT OF THE
SCIENCES—1858-1859

From Medical Times & Gazette, London: A CASE OF LABOR—

TWO OUNCES OF CHLOROFORM had been given during the Saturday and Sunday. Once the patient was nearly insensible. On inquiry why this had been done, the medical attendant stated that he did not approve of it, but the patient insisted upon having it. She informed me that a lady of her acquaintance was attended by "a chloroform doctor," and that she had, in consequence of this, contrary to the advice of her medical attendant, insisted upon taking it. It appeared almost certain that if he had not yielded to the wishes of his patient, she would have placed herself in other hands.

Evidently there were patients in those days, too, who decided for themselves, and on the advice of neighbors, what manner of treatment they would have.

Dr. Robert Hunter Semple, in his book on *COUGH* 1858:

I CAN NOT refrain from expressing an opinion upon the propriety of sending away a consumptive patient to a distant land, in the hope of curing the disease in his lungs. My conviction is that not only very little good, but very much harm, is generally done by such a proceeding. A patient is too often torn away from his home and his relatives, to perish in a foreign soil; or, after a brief sojourn in the land of his banishment, to return in a worse condition than when he went away. When the patients are fond of travelling, are able to bear the expense of it, and can carry their relatives and their household with them, there may be an advantage in a trip to the Mediterranean, or a residence in the south of France, or a tour in Egypt; but, in the great majority of cases, our own country affords as much physical benefit to the sufferer, and is perhaps far more congenial to his sentiments and his affections, not to mention pecuniary and other domestic considerations.

To mock the sufferings of a dying patient, by the administration of inert and useless globules, while the adoption of a rational and vigorous plan of treatment might restore him to life, appears to me to be nothing less than to ridicule human misery, and to welcome the approach of the Angel of Death. I can only hope that if any honest homoeopath (if there be such a person) should meet with a case of acute laryngitis, he would, at least for the occasion, renounce his creed, and prefer the sacrifice of a dogma to the destruction of a fellow-

creature. I by no means coincide in the view of those that believe that because bleeding is not generally so well borne as it formerly was, therefore all bleeding and all depletion are injurious. I believe, on the contrary, that in certain cases the abstraction of blood is not only justifiable but is imperatively demanded, and that acute laryngitis is a case in point.

The good doctor had the sense to take into consideration all the circumstances of the case and to individualize, and to put himself in the place of the patient.

From the *Deutsche Klinik*: TREATMENT OF BURNS BY WARM BATHS—

DR. PASSAVANT's experiments were made in the hospital at Frankfurt upon eighteen persons who had been all more or less seriously burnt in the explosion of a firework manufactory. The water, which was changed twice a day, or oftener if the suppuration was abundant, was kept at 27° Reaumur (93° F.) and at the end of some weeks, when the patients had become tired of them, the baths were changed for fomentations. Under their use pain and inflammation very soon came to an end; the hardened tissues became soft, and the eschars separated readily; the chances of irritation and purulent absorption became greatly diminished; and cicatrization proceeded more rapidly.

From *Comptes Rendues*: TREATMENT OF WOUNDS AND ULCERS BY VENTILATION—

BY MEANS of an ordinary bellows, or by some special contrivance for producing a draught of air, Dr. Bonisson dries up the effused fluid and obtains in this manner a crust by which the wounds or ulcers are covered and protected. The process of healing, he tells us, advances more favorably, and more rapidly under these circumstances—*subcrustean* cicatrization being to open wounds what *subcutaneous* cicatrization is for closed wounds. One of the advantages of this plan is the saving which it effects in charpie and other dressings.

From *Glasgow Medical Journal*: ON SHORTENING THE DURATION OF LABOR BY EXCITATION OF THE NIPPLES—

IN ORDER to increase the action of the uterus, and thereby hasten delivery, Dr. J. Gray advises us to excite the nipple as a labor-pain comes on, and continue the stimulation so long as it lasts. This is accomplished by passing the left hand gently but continuously upwards and downwards over one or other of the nipples; or by simulating with the fingers the act of sucking of the infant. By such manipulation, he says, the nipple erects, and, in virtue of reflex action, the uterine contractions increase in force; while at the same time the os dilates, and the external parts become relaxed. Be-

sides shortening the duration of labor, he finds it has also the effect of preventing hemorrhage. The second stage of labor completed, if the placenta be not in the passage, he still maintains at short intervals the friction over the nipple, in order that the uterus may expel its contents; and also resorts to it in cases where he has occasion to fear flooding.

If, I inquired, the application of the child to the breasts causes the womb forcibly to contract, and thus prevents flooding, may not a similar operation artificially performed have the same effect in promoting the contractile efforts of the uterus and hastening the delivery? That it does so, very ample trial has fully convinced me. I never, however, be it remembered, interfere in those cases where there are already active uterine contractions.

Certainly this sounds sensible. It seems remarkable that numerous accounts are not to be found of trial of this plan, whether the plan met with success or failure.

From *Medical Times & Gazette*, London: ON DELIVERY BY TURNING AS A GENERAL RULE IN LABOR—

MR. FIGG attempts to show, not only that delivery by turning is preferable to delivery by forceps in cases requiring operative interference, but that turning is the rule to be adopted in general cases. He tells us that he has attended sixty labors since writing these papers, that only three of these were conducted as head presentations, and that of the remainder two were breech presentations, and fifty-five delivered by turning. As the results of this astonishing practice we leave Mr. Figg to speak for himself:

"With regard to the children, they are generally still from two to five minutes, and in some cases for half an hour's duration. I confess with humility that I have even broken four arms, which, though they occurred in cases of great pelvic contraction were attributable to my own mismanagement in pressing over the shaft of the os humeri instead of following its line to the elbow. Should you commit the same error, with similar result, be not too candid to the relatives, but at once by your own dictum transubstantiate the injury into a slight sprain received by the infant striking its shoulder against the backbone of the mother while actively prosecuting his uterine gambols. It will pass current, more especially if you appeal to her experience, when it is sure to be corroborated by a quotation of the day and hour of the occurrence. Two slips of pasteboard applied, with a strip of calico a yard long, remedies the evil in ten days."

"The operation was ancient, but nearly obsolete, and its revival by Dr. Simpson in particular circumstances led to my adoption of it in general cases."

In a later communication, written chiefly as an answer to the strong objections of Drs. Robt. Lee, Ramsbotham, and Oldham, are the following passages: "Permit me," says Mr. Figg, "with humility to observe, that while physiology, anatomy, and analogy enable me to concoct as rational a theory for the operation as they can against it, I bring forward a formidable ally to my cause in nearly eighty-seven consecutive cases of perfect convalescence in mother and child, without adverting to a still greater number of successful instances effected at various intervals antecedently. Do these gentlemen impugn my veracity? Let them depute any member of the profession resident either in Edinburgh, Glasgow, or London, to visit the locality of my residence, and by impartial inquiry of my patients prove its immunity from danger and their satisfaction as to its adoption." And again: "While my deliveries average two per week, I have had but one death during the year—the second child of a woman aged 45, born to a second husband after a widowhood of fourteen years."

Anticipating obstetrician Potter, of Buffalo, by some seventy years.

From *Gazette des Hopiteaux, Paris*: SUPRAPUBIC PUNCTURE OF THE BLADDER—

A discussion upon this operation recently arose at the Paris Surgical Society on the occasion of the presentation of a memoir by M. Fleury, in which he stated that he had often performed the operation with success, and considered it a very easy one.

M. Chassaignac said when the abdominal parietes are very thin, and the bladder is much distended, few precautions are necessary; but in very fat or very muscular subjects we have then to employ a very long trocar, and to plunge it in very deeply; and there is danger of wounding the opposite side of the bladder.

M. Lobert considered puncture of the bladder as preferable to forced catheterism. He leaves in the canula for a fortnight, and then substitutes a caoutchouc tube. He observed, also, that the urine should not be allowed to run continuously from the canula. This should be plugged, and only opened every three or four hours; otherwise the bladder, contracting too readily upon itself, may abandon the canula.

M. Deguise could not understand how any difficulty could arise in introducing a catheter by the track of a canula that had remained in situ for eight days. He introduced a catheter on the first day, and changed it on the third or fourth, and he had never found any difficulty in so doing. He considered the operation a very easy one, providing that a preliminary incision be made down to

the linea alba. He employs a straight canula. The trocar is to be introduced horizontally, and a gum-elastic catheter is to be passed into the canula immediately on the withdrawal of the stiletto, and to be fixed in situ when the canula has been slid away upon it.

The stilet, enclosed in the canula should be passed horizontally above the pubis, instead of, as is usually directed, downwards and backwards.

It is to be wondered whether or not today suprapubic puncture could be used much oftener to the advantage of patients and attendants.

THE "DISGRACEFUL" SHOWING OF OUR YOUNG MEN

It could have been foreseen that those who have never been able to find anything good in the present system of rendering medical care would cry out to high heaven about the "disgraceful" state of health of the nation, "as revealed by the enormous number"—30 to 40 to 50%—"of rejections for army service."

The greater part of the disgrace in this connection lies in the disgraceful ignorance of those who have never been able to learn—

"Whoso thinks a perfect piece to see,
Thinks what ne'er was, nor is, nor e'er shall be."

The great majority of those who have fallen short of Army, Navy and Air Service requirements are gladly accepted as first-class risks by our best insurance companies; and insurance companies are not in business to lose money, and they know more about life expectancy and useful work expectancy than does any other group.

One might think from the number of rejections because of eye or tooth imperfections that modern soldiers are supposed to destroy the enemy with the glare of a Basilisk, or to bite them to death.

The most absurd of many absurd rulings is that which rejects men who have early syphilis. Acceptance would provide the ideal conditions for treating the disease until it is cured. There would be no risk of transmitting the disease to another soldier. The syphilitic soldier under treatment could render just as good service as the nonsyphilitic.

It should astonish no one (1) that perfection is a hope, not a fact; (2) that a famous oculist said after dozens of years of practice that he had never seen a pair of eyes capable, unaided, of errorless vision; or (3) that at least 95% of us have decaying teeth.

It should astonish us that Governmental regulations apparently are made by persons who do not take it into consideration that usability, not perfection, is what we need in our soldiers, and that George Washington made a pretty good soldier

and died well nourished despite the handicaps of a set of false teeth good only for dress occasions, and that he had to gum his meat for many a long year.

MIGHT SAVE YOU MONEY

State of _____
North Carolina Before.....
County Justice of the Peace

Plaintiff,
vs SUPERSEDEAS BOND

Defendant.
Whereas on the _____ day of _____,
the above named plaintiff recovered judgment
against the defendant in this Court for the sum
of \$ _____ and for the costs of suit:

And whereas the defendant has appealed from
the said judgment to the Supreme Court of
_____ County:

Now, therefore, we _____ and
suant to the statute, that if judgment is rendered
of _____ of the County
_____, State of North Carolina, undertake, pur-
against the defendant in the Superior Court, we
will pay the judgment together with all costs
awarded against the defendant.

_____(SEAL)

_____(SEAL)

_____, above named
being sworn, says that he is a resident and free-
holder in the State of North Carolina, and worth
double the sum specified in the above undertaking
over and above all his debts and liabilities and ex-
clusive of property exempt from execution.

Sworn to and subscribed before me, this.....
day of.....

Justice of the Peace.

Bond Approved

Justice of the Peace.

A doctor friend had occasion to appeal from a
magistrate's preposterous decision recently and, be-
cause he did not know how to draw a bond and
could not purchase such a blank form, he had to
pay a lawyer \$3.00 to write out the form.

Should any reader find himself in such case, he
can have his secretary type off the form given be-
low and save not only the \$3.00 but probably all
lawyer fees as in most instances in which a plaintiff
knows he can not win in Superior Court the case
is never called up.

NEWS

ANNUAL MEETING NINTH DISTRICT, N. C., MEDICAL SOCIETY

September 25, 1941, Vance Hotel, Statesville.

PROGRAM

1. 3:00 P. M.—Meeting called to order, by Dr. I. E. Shafer, District Councillor, Salisbury.
2. Invocation—Dr. Harry Gamble, Statesville.
3. Address of Welcome—Dr. M. B. Clayton, Statesville.
4. Response to Address of Welcome—Dr. J. R. Terry, Lexington.
5. Officers Called to the Chairs.
6. Election of Officers for 1942.
7. Memorial Service—Dr. T. V. Goode, Statesville.

Papers

1. The Plasma Protein—Its Physiology Relative to the Normal and Failing Circulation, Dr. F. B. Marsh, Salisbury.
 - Blood Plasma—Technical Discussion, Dr. John Elliott, Salisbury.
 2. The Etiology and Classification of Hypertension, Dr. John R. Williams, Winston-Salem.
 3. The Protection of the Soldier Against Communicable Disease, Capt. John W. R. Norton, Fort Bragg. Discussion: Dr. James W. Davis, Statesville; Dr. C. W. Armstrong, Salisbury.
 4. The Procurement of Medical Officers for Active Duty in the Army, Maj. R. C. Tatum, Headquarters, First Military Area, Knoxville.
 5. Modern Concepts of Vitamin Therapy, Dr. D. Frank Milam, Durham.
- Dinner at 7:30.
Toastmaster—Dr. James W. Davis.
Motion Picture—Intravenous Anesthesia.
Guest Speaker—Dr. L. G. Beall, Black Mountain.
Dist. Councillor—Dr. I. E. Shafer, Salisbury.
President—Dr. W. D. McLelland, Mooresville.
Vice-Pres.—Dr. S. A. Rhyne, Statesville.
Sec'y.—Treas.—Dr. J. Sam Holbrook, Statesville.

NORTH CAROLINA NEUROLOGICAL AND PSYCHIATRIC ASSOCIATION

Meeting at State Hospital, Morganton, October 24th

Program

1. Shock Therapy
1. Metrazol Therapy—Drs. R. H. Long & J. R. Sanders, State Hospital.
2. Insulin Therapy—Dr. Otto Billig, Highlands Hospital, Asheville.
3. Electro-Therapy—Drs. Griffin and Griffin, Appalachian Hall, Asheville.

The subject matter discussed in this symposium is gathered from our clinical experience over the recent years.

Drs. J. G. N. Cushing and Mary Cushing of Pinebluff Sanatorium and Dr. Hans Lowenbach of Duke Hospital will open discussion of the papers in the order presented.

2. Changing Trends in Therapy—Dr. John A. Rose, Bowman Gray School of Medicine, Winston-Salem.

This discussion concerns the development of direct personal treatment in the evolution of child guidance clinic function, and also, shows how this development is affecting our ideas of dealing with nervous disorders in adults and in the teaching of clinical psychiatry in medical schools.

Intermission—five minutes

3. Encephalitis—Dr. Paul Kimmeltiel, Memorial Hospital, Charlotte.

This discussion will be from a pathological point of view.

4. Deficiency Diseases of the Nervous System—Dr. Leo Alexander, Duke Hospital.

This lecture is an outline of the clinical neuropsychiatric syndromes, physical and neurological signs, as well as of the correlated pathological and histological changes, encountered in patients suffering from deficiency diseases. This clinico-pathological study includes those deficiency syndromes which are primary, as well as those which are secondary to alcoholism, diabetes or other intestinal and metabolic disorders.

5. Business meeting.
6. Social Hour. Host: Dr. F. B. Watkins and Staff of State Hospital.
7. Dinner.
8. Round-table discussion of neurological and psychiatric examinations of the Draftees. Led by Dr. J. C. George, U. S. M. C., Asheville; and Dr. L. G. Beall, Black Mountain.

Officers

President—Dr. Archie A. Barron, Charlotte.
 Vice-President—Dr. F. B. Watkins, Morganton.
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SOUTHERN PSYCHIATRIC ASSOCIATION ELECTS HALL

Dr. James K. Hall, Richmond, was named president-elect of the Southern Psychiatric Association and Richmond was selected as the site of the 1942 convention at its recent meeting at Nashville. The date of the convention will be selected later.

Dr. Whitman McConnell, of St. Petersburg, Fla., was installed as president, succeeding Dr. Arthur J. Schwenkenberg, of Dallas, Texas.

The "swarms of hysteria which were expected to follow" the air raids in the British Isles have not developed, although Germany's bombings have caused an increase in "certain psychiatric disorders," the association was told.

The paper was prepared by Dr. Felix Brown, registrar in psychological medicine at Guy's Hospital, London, and read before the association.

MEDICAL SOCIETY OF VIRGINIA

At this year's meeting at Virginia Beach just concluded Dr. Roshier W. Willer, of Richmond, was installed as president and Dr. J. M. Emmett, of Clifton Forge, was made president-elect.

Dr. Emmett is a native of Oxford, N. C., a graduate of the Medical College of Virginia, Richmond, in 1915, and for a number of years maintained an office at Richmond.

Dr. Miller succeeded Dr. Walter B. Martin, of Norfolk. Dr. Martin and Dr. Carrington Williams, of Richmond, were elected delegates to the American Medical Association meeting in June. The society voted to hold the 1942 meeting at Roanoke and elected the following other officers:

Dr. James W. Anderson, of Norfolk, Dr. G. G. Scott, of Lynchburg, and Dr. J. P. Williams, of Richlands, vice-presidents, and Miss Agnes Edwards was re-elected secretary-treasurer.

In an address at the morning session, Commander W. P. Jackson, of the United States Naval Reserve, told the society that the airplane had tremendous potentialities for spreading disease and urged careful regulation under direction of competent health officers, with adequate equipment and personnel, for control.

Slightly more than half of the men in Norfolk who have been examined for military service have been rejected as unfit, Dr. C. Lydon Harrell, chairman of the local examining boards, told the convention. Dr. Harrell called the

unusually high percentage of rejections, here and elsewhere, "a shame and a disgrace to a civilized and cultured nation." "The problem of defectiveness in our youth should be given careful study by our health authorities," he said, "and an effort made to correct these defects if possible." He also suggested that it was unfair to exempt from military service those with treatable and curable diseases or ailments. "Why," he asked, "should those with reparable hernia be excused from service, or the ones with well-fitted artificial teeth or other minor defective teeth that are otherwise physically fit, be deferred?" "Many of us think," he continued, "that the ones with venereal disease should be treated until they have passed the contagious stage, then be inducted into service. It is just not fair to those that have been called."

DR. COPPEDGE CONFIRMED

After much wrangling and litigation, Dr. T. O. Coppedge has been confirmed as health officer of Nash County. An act passed by the last General Assembly of North Carolina gave the commissioners of Nash County authority to approve or to disapprove the selection of the county board of health's appointment of county physician. After the county board of health had elected Dr. Coppedge county physician, the county commissioners would not approve the election. The majority of the Supreme Court expressed the opinion that the state constitution forbids the legislature the authority to enact local health laws.

DR. ALEX W. TERRELL, son of the late Dr. J. J. Terrell, who was known as "Lynchburg's Last Quaker," laid the cornerstone of the new Quaker Memorial Presbyterian Church Sunday, October 12th. Dr. Terrell was instrumental 40 years ago in having the present church built on the ruins of the old Quaker Meeting House where the city's founder, John Lynch, worshipped. Dr. Terrell is Lynchburg's oldest practicing physician. The new building is being erected a few feet from the restored building.

DR. ARTHUR E. ANDERSON, of Wilmington, has become a member of the staff of the State Hospital at Morganton as the first full-time dentist of that institution.

DR. MASON I. LOWRANCE announces the removal of his offices to 215 Doctors Building, Atlanta. Internal Medicine. Allergy.

DR. G. A. HAWES and DR. HUNTER JONES, Charlotte, were guest speakers at a meeting of Grace Hospital Morganton, Staff, the evening of October 6th. All physicians of Burke County were invited to attend the meeting, held at Hughson Hall, with Dr. John W. Ervin in charge of the program. Dr. Hawes spoke on sterility of the male, and Dr. Jones discussed sterility of the female.

DR. WHITEHORN GOES TO JOHNS HOPKINS—Announcement has been made that Dr. John C. Whitehorn, professor of psychiatry at Washington University School of Medicine, St. Louis, has been appointed to the chair in psychiatry and director of the Henry Phipps Psychiatric Clinic at Johns Hopkins University, to succeed Dr. Adolf Meyer, who retires this year.

The selection of Dr. Whitehorn for this very important post is to be regarded as a happy choice. His well established reputation as a clinician, teacher and investigator predicated success in upholding the high traditions of Johns Hopkins.

Psychiatry still partakes somewhat of the weakness of psychology—the echoes of the schools have not yet died away. Perhaps in no other discipline is it so necessary that a leader be firmly grounded in the scientific method and the technique of the laboratory. Dr. Whitehorn's

training, experience and personality fully satisfy this condition.

—*The American Journal of Psychiatry*, July, 1941.

DR. HUGH C. WOLFE, of Greensboro, is the new president of the North Carolina Eye, Ear, Nose and Throat Society. Dr. J. H. Fitzgerald, of Smithfield, was elected vice president, and Dr. Vanderbilt F. Couch, of Winston-Salem, was re-elected secretary-treasurer. Dr. Wolfe succeeds Dr. Milton R. Gibson, of Raleigh.

DIED

Dr. Nathaniel Peter Moss, 76, Roanoke, retired Lafayette, La., banker, died in a hospital at Roanoke October 10th, a few hours after he was stricken with a heart attack. Native of Lafayette, he founded and was for years president of the First National Bank there, retiring in 1925 when he came to live in Roanoke, where he had spent his summers for several years prior to his retirement.

Dr. Bert Reade Long was found dead in his bed in Greensboro on the morning of September 27th. He had been for several years a member of the department of health of Greensboro.

Dr. C. A. Ranson, of Falls Church, Va., one of the coroners of Fairfax County, died of a gunshot wound September 20th.

Dr. C. Dudley Barksdale, 70, Halifax County, Virginia's, oldest practicing physician in point of service, died September 20th at his home near Sutherlin after a brief illness.

Dr. John Webster McGehee, 62, prominent physician and distinguished citizen of Reidsville, died September 23rd, after a brief illness.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF VIRGINIA

ADVANCE NOTICE OF THE FIRST SESSION OF THE COLLEGE

From the "Medical Intelligence" of the *Southern Medical & Surgical Journal* (Augusta, Ga.), June, 1838:

We have received the circular of the Medical College of Richmond, Virginia.

The following is the arrangement of the Faculty:

H. Johnson, M.D., Professor of Anatomy and Physiology.

John Cullen, M.D., Professor of Theory and Practice.

S. W. Chamberlayne, M.D., Professor of Mat. Med. and Therapeutics.

R. L. Bohannon, M.D., Professor of Obstetrics and Diseases of women and children.

Aug. L. Warner, M.D., Professor of Surgery.

Socrates Maupin, M.D., Professor of Chemistry and Pharmacy.

This new Medical School is opened under the auspices of the Hampden Sidney College, whose Trustees have organized and located it in the city of Richmond. Its annual session is to commence on the 1st Monday in November, and continue until the last week in March, a period of five calendar months; and candidates for the Doctorate are required to have deposited with the Dean, a suitable essay by the 1st day of January.

Although of sound political bearing, pointing the citizens of its own state to what it considers both their duty, and

present and prospective interest, the circular, considering the usages of the day in such cases, enjoys an honourable exemption alike from the boasting, and the invidious comparisons and electioneering manoeuvres which have too often disgraced the annual announcement of some of the American Medical Seminaries.

It is observed that the session of lectures is extended to five, instead of the usual term of four months. This is, of itself, correct. And it is very justly observed, that "the addition of another month to the ordinary session of medical lectures, (which is admitted by every physician to be entirely too short) will enable the professors to complete the course which would otherwise be imperfect." But from experience in point, we are led to apprehend the advantages thus offered will not be duly appreciated by the medical students, so long as there are other similar institutions which offer a shorter term; but on the contrary, could the majority of medical students be allowed to sway the colleges in this particular, the term would soon be reduced to two or three months. Students expect in the inconsideration of their youth, to "combine pleasure with business, and gain the rewards of industry, without suffering its fatigues," and reap to themselves the profits of a costly profession without paying the tribute money necessarily due to its procurement.

Convocation exercises opening the one hundred fourth session of the college were held at 12 noon, September 15th, at The Monumental Church. President Sanger presided and talks were made by the four deans, the secretary-treasurer, the president of the student body, and the president of the college Y. M. C. A. Reverend George Ossman, rector of the church, gave the invocation and benediction.

Dr. Lewis E. Jarrett, director of the hospital division, attended the annual meeting of the American Hospital Association, September 13th-17th, at Atlantic City.

The United States Public Health Service has made a grant of \$3,000 for the Saint Philip school of nursing and \$12,350 for the college school of nursing.

The Crockett Memorial Laboratory was dedicated with appropriate exercises on the afternoon of September 15th at 3 o'clock. This laboratory was made possible by gifts from friends and former students of the late Doctor Crockett, the pharmacy profession at large, and others. This laboratory will be used by junior and senior students of the school of pharmacy.

Dr. Thomas D. Rowe received his doctorate during the summer and has been made associate professor of pharmacy to succeed the late Dr. W. G. Crockett as head of the department.

Dr. Ralph A. Logan, Dr. Philip Modjeski and Dr. E. P. Ferrari have joined the faculty of the dental school.

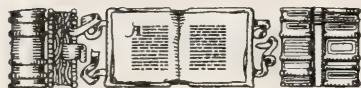
Dr. Ann T. Swing has been appointed B. Armistead Shepherd fellow in immunology for the current session.

The second symposium on industrial health was held at the college, September 10th-12th. The number in attendance exceeded last year and the meetings were enthusiastic. Distinguished speakers from far and near were gathered for this program. It is hoped that this important feature of the work of the college may be continued.

It is expected that the superb piece of statuary given the institution by Mrs. Anna Hyatt Huntington, distinguished sculptress, will be received before very long; the setting for the group, designed by Mr. Charles F. Gillette, Richmond landscape architect, is practically completed.

Dr. John M. Meredith has been appointed associate professor of neurological surgery, replacing Dr. W. Gayle Crutchfield, resigned. Doctor Crutchfield has accepted the professorship of neurological surgery at the University of Virginia.

BOOKS



A TEXT-BOOK OF PATHOLOGY, Edited by E. T. BELL, M.D. Contributors: E. T. BELL, M.D., Professor of Pathology, B. J. CLAWSON, M.D., Professor of Pathology, J. S. MCCARTNEY, M.D., Associate Professor of Pathology—all of the University of Minnesota, Minneapolis, Minn. Fourth edition, enlarged and thoroughly revised, published 1941. Octavo, 931 pages, illustrated with 431 engravings and 2 colored plates. Cloth, \$9.50 net.

This excellent work has been thoroughly revised and additions have been made. It offers a large amount of entirely new material, forty-one new figures and references to the latest literature in this field. Pathological physiology has been included in connection with the majority of diseases in which well-established data are available. A conservative attitude is shown toward opinions which are not yet widely accepted. It supplies the medical student with a textbook which he may use during his clinical training and supplies a useful reference book to the practicing physician. The authors feel that clinical medicine should be considered as a direct continuation of pathological

studies and not as an abrupt entrance into a new field. The illustrations are original, the arrangement is rational and the subject is presented as a living science of the nature and causes of disease on which all successful practice of medicine must be based.

CANCER OF THE FACE AND MOUTH—Diagnosis, Treatment, Surgical Repair, by VILRAY P. BLAIR, M.D.; SHERWOOD MOORE, M.D., and LOUIS T. BYARS, M.D., Saint Louis. Illustrated. C. V. Mosby Co., St. Louis, \$10.00.

Cancer of the face, in particular, is the cancer whose victims have been most exploited by quacks with their salves. The introduction by Dr. J. M. Finney is sufficient guarantee of the high-class of the volume, the basis of which is a close study of 1,500 cases in the past twenty years, in the light of reports of the work of others from all over the world.

The general consideration of cancer of these parts lays a broad foundation; then follow chapters on principles of destruction of cancer and care of the patient as a whole.

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tion with the nose—all these are dealt with elaborately. Moles, nevi and melanomas are treated of with the care their importance demands. Other chapters are given to tumors of the salivary glands, cervical node metastases, anesthesia, destruction by radiation, and follow-up and statistics.

The general practitioner, the general surgeon, the dentist and the cosmetic surgeon will find in this book the solution of many of his problems.

IMMUNITY AGAINST ANIMAL PARASITES, by JAMES T. CULBERTSON, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, 1941. \$3.50.

This is a textbook written to acquaint those beginning the study of immunity to the parasitic forms with the fundamental principles of the subject, and to give the more experienced the vital things to be found in the recent writings dealing with immunity in parasitic infection. The matter is presented in a manner suited to the needs of the beginning student, which is at the same time the manner suited to the trained investigator, and the general physician or veterinarian.

Contents

Part I: Natural Resistance and Acquired Immunity

1. Introduction
2. Natural Resistance
3. Age Resistance
4. Specifically Acquired Immunity
5. Requisites for Immune Response
6. Parasites Which Elicit Immunity
7. Mechanisms of Specific Immunity
8. Demonstrations of Immunity

Part II: Immunity in Specific Diseases

9. The Amœbiases
10. The Leishmaniasis
11. The Trypanosomiasis
12. The Malarias
13. The Coccidiosis
14. The Trematodiasis
15. The Cestodiasis
16. The Nematodiasis
17. Response to Arthropods

Part III: Applied Immunology

18. Classification of Parasites
 19. Vaccination against Parasites
 20. Diagnosis of Parasitic Infection
- Abbreviations of Names of Periodicals
Index

DISEASES OF THE BLOOD AND ATLAS OF HEMATOLOGY: With Clinical and Hematologic Description of the Blood Diseases Including a Section on Technic and Terminology, by ROY R. KRACKE, M.D., Professor of Bacteriology, Pathology and Laboratory Diagnosis, Emory University School of Medicine, Pathologist to the Emory

Hospital. Second Edition, thoroughly revised, reset and enlarged; including 54 color plates and 46 other illustrations. J. B. Lippincott Co., Philadelphia: London: Montreal. 1941. \$15.00.

To those familiar with the first edition of this masterful work it is hardly necessary to say that this edition brings the knowledge of this section of Medicine up to the present. New material has been added on the fractioning of liver extract and action of drugs on the blood; a new chapter on hemoglobinuria and another on hemolytic anemias; and a new section on hemoglobin and its derivatives. There is a good deal of new material on blood transfusions, blood banks and the use of blood plasma. The development of knowledge of vitamin K is given in detail. Dr. Lloyd Carver of New York contributes the chapter on treatment of leukemia.

Dr. Kracke's thought to provide a section on hematologic terminology is an illustration of the thoroughly practical nature of the work. There are sections on the development and morphology of blood cells, leukocytosis and leukopenia, the anemias, the leukemias, hemorrhagic diseases, hematologic technic; and in an especially useful chapter are included a number of the conditions which for



the purposes of this work must be classed as miscellaneous.

Dr. Kracke's rank as an authority in this field and his ability to impart his knowledge of this important subject are attested by the great demand for him as a speaker before postgraduate assemblies all over the country. His clear expositions are amply supplemented by excellent pictures.

Very few will be the medical publications of this year so indispensable to the practitioner of medicine and/or surgery.

DR. COLWELL'S DAILY LOG FOR PHYSICIANS. Reg. U. S. Pat. Off., A Brief, Simple Accurate Financial Record for the Physician's Desk. Personal Property of Dr. _____ . Published by Colwell Publishing Company, Champaign, Ill. \$6.00.

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THE TOPICAL USE OF SULFATHIAZOLE IN DECUBITUS ULCERS

(J. I. Goodman & J. F. Corsaro, Cleveland, in *Ohio Med. J.*, Oct.

In the first case to be reported we were confronted with a lesion which had failed to heal within a period of 10 months of daily treatment with one or more of the generally accepted measures. There was utter failure of response. The application of sulfathiazole powder produced complete healing within 21 days.

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FIVE HUNDRED CONSECUTIVE THYROIDECTOMIES

(R. B. McKnight, M.D., Charlotte, in *N. C. Med. J.*, Aug.)

These toxic patients are put to bed at absolute rest, sedation is given as needed (it is seldom needed after the first or second injection), a high-calorie diet is administered, and—most important—a daily intravenous injection of 500 to 1000 c.c. of 10 per cent glucose or dextrose with 100 to 150 minims of Organidine is given. After the second or third injection metabolic studies are repeated. The clinical picture of improvement is the chief criterion for operation. It is unusual to keep a patient under preparation more than five days, and the big majority are operated on by the third or fourth day after treatment is begun.

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tolerance determinations, basal metabolic rates, and—the most important of all—the clinical evaluation of the patient and its correlation with laboratory data.

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• 1941 •

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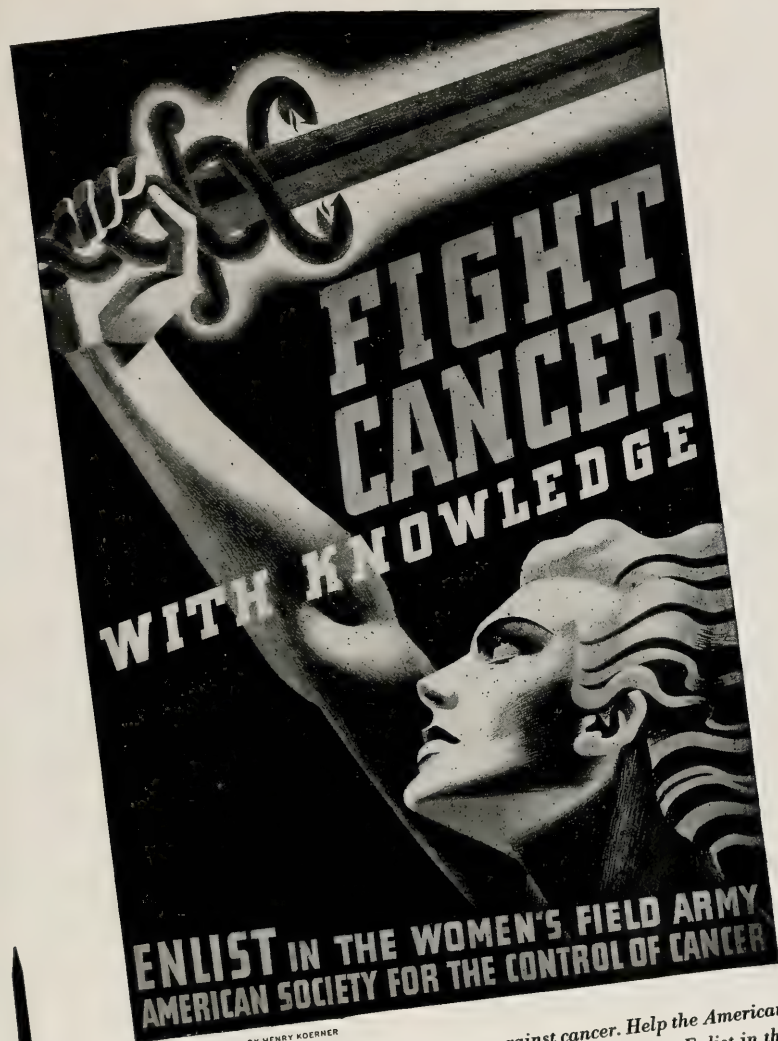
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JAMES M. NORTHINGTON, M.D., Editor

Vol. CIII

CHARLOTTE, N. C., NOVEMBER, 1941

No. 11

Coronary-Artery Disease in General Practice

ERNEST LEE COPLEY, M.D., Richmond

ABUNDANT EVIDENCE attests that doctors recognize and understand diseases of the coronary arteries and their relation to heart failure far better than in previous years. All Vital Statistics records show a large increase in the mortality from this type of heart disease. After giving all due weight to the alleged strain and tension of modern life, no one believes there has been the rise in the mortality which these statistics would seem to indicate. It is obvious that physicians now are more accurately diagnosing thrombosis and occlusion of the coronary arteries and the consequent myocardial infarction and heart failure. Undoubtedly many deaths have been certified to have been caused by simple heart failure, when the actual cause of death was myocardial infarction and heart failure. Coronary occlusion and the resultant myocardial infarction constituted the primary cause of death. Although many excellent studies¹ had been made and reported, the diseases of the coronary arteries were generally so little understood and appreciated that, prior to 1930, no separate statistics were kept for deaths from occlusion of these arteries and the resulting catastrophe to the heart muscle.

The statistics from the Virginia Bureau are interesting. For the past eleven years they are as follows:

<i>State of Virginia</i>		
	<i>White</i>	<i>Colored</i>
1930.....	113	13
1931.....	107	28
1932.....	203	44
1933.....	328	50
1934.....	391	93
1935.....	455	121
1936.....	609	135

1937.....	719	143
1938.....	846	156
1939.....	1022	165
1940.....	1169	232

These statistics, under the heading, Diseases of the Coronary Arteries, include coronary thrombosis and occlusion, and heart-wall infarction. They are not classified and the classification is not necessary. Of most importance for present purposes are the statistics themselves. Many researches² have been made in the last few years on the clinicopathological correlation of the coronary artery disease and occlusion and infarction of the myocardium. Very significant to note in the statistics given is the tremendous increase in the number of deaths reported from a certain "new" type of heart disease within a decade—no case reported before 1930, 126 cases reported for the year 1930, 1401 for the year 1940! It is obvious that physicians generally have in that ten-year period come to recognize disease of the coronary arteries as a primary cause of death, and so report.

The City of Richmond established its own Vital Statistics Bureau in 1935. The statistics for the past six years for the city are as follows:

<i>Richmond City</i>		
	<i>White</i>	<i>Colored</i>
1935.....	41	5
1936.....	60	10
1937.....	81	18
1938.....	90	14
1939.....	132	18
1940.....	109	23

The increase in the mortality for Richmond is as great as that of the State as a whole. The number of deaths rose from 46 in 1935 to 150 in 1939. There was a slight decrease in 1940.

Dr. Francis P. Denny, health officer of Brookline, Massachusetts, reclassified the records³ of all heart deaths from 1900 to 1935 in that suburb of Boston. He found that from 1900 to 1904, the records showed no death ascribed to coronary-artery disease. Between 1905 and 1907, the death rate from this cause was reported 3.9 per 100,000 population. For the next five-year period the number of deaths so reported rose slowly. From 1915 on, the rate increased rapidly, so that from 1930 to 1934 a rate of 94.6 per 100,000 was reported and in 1935 the rate was 156.6. Assuming comparable conditions in Richmond, this city should have reported a much larger number of deaths from coronary-artery disease than 46 in 1935—or even 150 in 1939.

A study of the statistical reports dealing with coronary-artery disease led me to review my own case records. At present, I have under my care six patients with coronary-artery disease whose cases I believe I have correctly diagnosed. All of these have had the typical syndrome of coronary occlusion with infarction. With one exception, the diagnosis has been further confirmed by electrocardiograms regarded as diagnostic of occlusion and infarction. Several of these cases have been treated in local hospitals and the diagnosis has been concurred in by other physicians. In the one case in which I did not make an electrocardiogram the initial attack and the physical findings were as typical as in the other five cases. I am therefore quite positive these six cases have been correctly catalogued.

In the past three years, I have had three patients who died following what I am sure was coronary occlusion with myocardial infarction. The first of these was a Hebrew, aged 45. I first saw him the night of November 4th, 1939, in profound shock, almost moribund. He gave the history of having had, for several days, severe substernal pain radiating down both arms. The blood pressure readings were very low, and the radial pulse could not be felt. He was taken in an ambulance to a hospital where he died the next day. The cause of death was certified to be acute coronary occlusion. No autopsy was obtained.

The second patient, a man, aged 61, I was called to see at 3 a. m., August 2nd, 1940. He gave the history of severe substernal pain radiating to the left shoulder, which had persisted all night. This man, obviously gravely ill, was perspiring freely; his blood pressure was 90 systolic, 40 diastolic. I informed the family that I thought we were dealing with a case of coronary thrombosis with occlusion. He was made comfortable with morphine and in 36 hours was taken in an ambulance to a hospital. In the hospital, he had fever which ran a

low-grade course, and moderate leukocytosis. An electrocardiogram showed the tracings of a fresh myocardial infarction. This patient had a stormy course. Heart compensation was inadequate during the entire period of his illness which ended in death February 19th, 1941. The cause of death was certified to be coronary occlusion with myocardial infarction. No autopsy was permitted.

The third case was that of a colored man, aged 55. I had examined this man from time to time and at each examination his blood pressure was high. Also, he gave a history of substernal pain and dyspnea on exertion, so he was forbidden to do laborious work and cautioned against any kind of exertion. He died suddenly, July 25th, 1940, while trying to catch a pig. I certified the cause of death to be coronary thrombosis with sudden occlusion. No autopsy was obtained. I believe these three cases were correctly diagnosed and properly reported.

I treated other cardiac patients earlier in the eleven-year period covered by the statistics of the Virginia Bureau, some of whose cases I am equally certain were incorrectly diagnosed and improperly reported. These cases will be outlined.

The first of these cases is that of a white woman, aged 49, obese and hypertensive for an undetermined number of years. I saw her first at 4 a. m., April 5th, 1934. She had severe substernal pain, was dyspneic and had a very low blood pressure. Morphine was given until her pain and distress were relieved. She was ordered to stay in bed and was visited almost daily for the period of her illness. Her condition appeared favorable until twenty-three days after the onset of her illness. I was then called at midnight and found her in congestive failure. Neither the blood pressure nor the pulse could be obtained. She died in about two hours. I certified the cause of death to be congestive heart failure with acute dilatation. I feel certain now that the primary cause of the congestive failure was coronary occlusion with myocardial infarction. No electrocardiogram was made nor was an autopsy performed.

A colored man, aged 65, was brought into my office in mid-afternoon September 28th, 1935. He gave the history of having been seized with terrible pain under his breast bone while walking along the road near his home. He was unable to proceed and lay down by the roadside until friends came and brought him to my office. He was in shock and had the sense of impending disaster. The pulse was weak, blood pressure 80 systolic and 30 diastolic. He was given morphine and ordered taken home where he was seen the next day. At that time he was acutely ill with congestive failure. On the third day of his illness he died. I certified the

cause of death to be chronic myocarditis with myocardial degeneration. I feel sure now the primary cause of death was coronary thrombosis with acute coronary occlusion. No autopsy was performed.

A large colored woman, aged 53, was brought into my office at midnight July 5th, 1936, in great distress and fearful of impending disaster. She was suffering terrible substernal pain and begged for relief. I considered a dissecting aortic aneurism as a possible diagnosis, but ruled it out because there was no radiating pain to the abdomen and the blood pressure was low. She rapidly became dyspneic. With difficulty she was taken home, where she became orthopneic. I visited her several times daily for the next three days. She went down hill so rapidly that I was dismissed for another physician. Still a third physician was called the last day of her illness who signed her death certificate. Strangely enough he certified the cause of death to be cerebral apoplexy. No autopsy was performed. I am positive this patient died of an acute coronary occlusion with myocardial infarction.

I have no doubt that in other cases of mine, in the light of present knowledge, a carefully elicited history of the pain would have revealed them to be coronary heart cases. I feel certain the three cases just reported in abstract should have been included among those resulting from coronary-artery disease.

There are encouraging factors in the diagnosing of coronary artery disease. Physicians treat with more respect than formerly the pain of what was long called acute indigestion. Less bicarbonate of soda is given and more time is taken to obtain a clear history of these attacks. The public knows more about the significance of substernal pain. The electrocardiograph is in reach of most physicians and with reasonable study the tracings can be read. Probably of greatest importance is the study of the diseased heart at autopsy. And, finally, with a proper appreciation and understanding of coronary artery disease it is possible to prolong the most productive period of many lives.

SUMMARY

Statistics afford evidence that physicians understand and diagnose the diseases of coronary arteries far better than in previous years.

Twelve case records are reported in some detail: six of the patients still living, their disease correctly diagnosed; three dead, their disease correctly diagnosed; and three dead, their disease incorrectly diagnosed and improperly reported.

Some of the encouraging factors in the diagnosing and managing of coronary-artery disease are pointed out.

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SCALENUS ANTICUS SYNDROME (BRACHIAL NEURITIS)

(Exum Walker, Atlanta, in *Jour. Med. Assoc. of Ga.*, Aug.)

The scalenus anticus syndrome occurs with frequency, but often it is not recognized. It is the commonest form of brachial neuritis, the symptoms of which can be promptly relieved.

The symptoms result from mechanical irritation of the brachial plexus as it passes over the first rib, between the scalene muscles. Contributing factors are movements of the upper extremity, and local anatomic and postural relationships affecting the brachial plexus.

If, in any part of the distribution of the brachial plexus, there is pain which is aggravated by using the arm in certain positions, and tenderness is present over the supraclavicular region, the scalenus anticus syndrome is the most likely diagnosis.

Compression of nerve roots by the herniation of a cervical intervertebral disc, or by arthritis of the cervical spine, produces a very similar clinical picture, and must be differentiated. Other conditions to be considered are spinal cord tumor, syringomyelia, Raynaud's disease, subacromial bursitis, and tumor of the brachial plexus.

Surgical section of the scalenus anticus muscle results in prompt relief of pain. This can be accomplished through a small incision, and requires hospitalization for only three or four days.

VITAMIN K

A great number of reports in a number of journals credit Vitamin K, the anti-hemorrhagic vitamin, with wide usefulness. It appears to be necessary for prothrombin formation, and this aids in blood coagulation. Two forms, from alfalfa and from putrid fish meal, are known; one has been synthesized. It is produced also by a number of bacteria including those in the intestines. Apparently it requires the presence of bile salts in order to be absorbed.

At the present time the indications for the administration of vitamin K as a prophylactic measure appear to be as follows: It should be given to expectant mothers shortly before delivery. Its use is indicated in cases of intestinal obstruction, surgical short circuits of the intestines and conditions associated with chronic diarrhea. It is worthy of trial in chronic liver disease, but is peculiarly valuable in the preoperative and postoperative treatment of cases with obstruction of the common bile duct.

Vitamin K is of the greatest value in the treatment of hemorrhagic disease of the newborn, and in bleeding associated with obstructive jaundice. It will probably be found effective in cases of bleeding associated with disorders of the alimentary tract when ascorbic acid deficiency is not the cause. It should be tried in bleeding associated with primary diseases of the liver. It is almost certainly not effective in hemorrhagic conditions such as hemophilia and purpura hemorrhagica.

The Basic Problems of Acute Appendicitis*

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IT WOULD BE in the highest degree unfortunate if the impression were to become general that the problem of acute appendicitis had been in any way solved by the remarkable reduction in the morbidity and mortality of appendicular peritonitis recently achieved by the use of the sulfonamide drugs. Spectacular as these results are, they have not altered a single one of the fundamental problems of this disease, in the correct concept of which peritonitis is classified as a regrettable and entirely avoidable complication and not as an integral phase of the pathologic process. The challenge of acute appendicitis is exactly what Elman recently stated it to be; it is not the treatment of the perforated organ and the consequent peritonitis, but the removal of the acutely inflamed appendix before these dire consequences come to pass. The simplest way to reduce, and indeed practically eliminate, the mortality of acute appendicitis is not to treat peritonitis with sulfanilamide or with anything else, but to increase the proportion of cases of uncomplicated acute appendicitis which come the way of the surgeon.

Bower of Philadelphia has probably done more than any person living today to demonstrate how the mortality of acute appendicitis can be reduced. One hesitates, therefore, to take issue with him on any matter connected with the disease. On the other hand, I can not agree with him that medical men should cease to write about and medical editors should cease to accept articles on acute appendicitis and should concentrate all their attention, instead, on rupture and peritonitis. In one sense, of course, his contention is correct. Peritonitis is the cause of most deaths in acute appendicitis. But that situation does not prevail because too little attention is paid to peritonitis. It prevails because too little attention is paid to acute appendicitis while it is still acute appendicitis. Appendicular peritonitis develops because physicians fail to recognize the syndrome of uncomplicated appendicular disease, the spreading of the gospel of which has been Bower's chief contribution to the subject.

Some years ago the Committee on Acute Appendicitis of the Philadelphia Medical Society, at Bower's instigation, undertook a survey of the presentation of acute appendicitis in standard text-

books, systems and monographs. Some years later I undertook a similar survey for a similar committee from the Orleans Parish Medical Society. Both committees arrived at approximately the same conclusions. To quote my own report, most descriptions, if they do not give the impression that gangrene, rupture and peritonitis form part of the initial syndrome of acute appendicitis, are so languid, so unemphatic, that the reader—who, unfortunately, is often a medical student receiving his first introduction to the disease—gets no idea whatsoever of its urgency. In other words, the average presentation of acute appendicitis is neither accurate nor adequate, and this more than half a century after Reginald Heber Fitz published the paper with which the modern knowledge of acute appendicitis begins and which includes most of the modern knowledge of acute appendicitis. In this paper the most frequent of all surgical diseases was not only elevated to its proper place in the scale of frequency but was at the same time correctly described from every aspect, including the therapeutic.

There are certain basic considerations which ought to be included in every discussion of acute appendicitis. Practically all of them are included in a text written in 1914, which we investigated as part of the study just referred to. This particular description states that acute appendicitis is frequent, serious, alarming, multiple in its manifestations and phases, demanding heroic measures for its relief, as clearly a surgical disease as a broken leg, a disease which demands the services of a surgeon as soon as it is suspected and in which medical treatment is relegated in the best practice to the limbo of contemptuous oblivion. That is the sort of flat-footed, unequivocal plain speaking which still ought to be used about acute appendicitis.

THE PROGRESSIVE PATHOLOGY OF ACUTE APPENDICITIS

Acute appendicitis is an exciting disease and a disease to become excited about, if for no other reason than that of its unpredictability. It should always be conceived of from the standpoint of pathologic progression. It begins as a strictly localized, intrinsic, readily curable disease. It may terminate, if not interrupted by natural reversal or by surgery, as a disease which involves, directly or

*Read by invitation at the 67th annual meeting of the Central Illinois District Medical Society at Springfield, November 6th.

indirectly, tissues and organs adjacent to and remote from the appendix, and which may be incurable by surgery or any other means. The serious character of acute appendicitis is readily explained by the structure in which it originates. The appendix is a vestigial organ. It is a blind pouch which may assume various positions in relation to the cecum. It has a terminal blood supply. It has an obstructive mechanism at the base. It is filled with infected contents even under normal circumstances, and it contains a large amount of lymphoid tissue, which is notoriously prone to infection. These facts all make it clear why, when once the disease has been initiated, the circumstances are all in favor of its assuming a progressively serious course.

Acute appendicitis presents two distinct forms. The first or infectious variety is frequently self-limited, though it can not be predicted in any given case that self-limitation will occur, and Walton's statement that there is no such thing as subsiding acute appendicitis bears tribute to this uncertainty. Far too little attention has been paid to the second or obstructive variety of acute appendicitis. It was first described by Wilkie more than 25 years ago, and valuable clinical and experimental evidence has recently been contributed by Wangenstein and his associates, who point out that in this type of disease both the symptomatology and the pathologic process present the risk of internal intestinal strangulation. There is little or no tendency to spontaneous reversal in obstructive acute appendicitis, a fact which ought particularly to be emphasized because the initial symptoms, although frequently prominent, are not associated with a constitutional reaction until a number of hours have elapsed, and therefore may be very misleading. Meantime, tension within the appendix increases rapidly, especially if a fecalith or other foreign body is present, gangrene and then perforation occur, and the appendiceal contents, swarming with bacteria, are spilled into a totally unprepared peritoneal cavity.

Generally speaking, gangrene is a more favorable development than perforation, and localized peritonitis or appendiceal abscess is a more favorable development than spreading peritonitis. Yet none of these developments is really favorable and it speaks ill for our concept of the disease that we should so regard them. The whole matter is relative. Gangrene and rupture are considered complications of acute cholecystitis and there seems no good reason why they should not be regarded as complications of acute appendicitis and not as phases of the integral pathology. The most important consideration from the pathologic standpoint, however, is that any prediction as to what

is going to happen in any given case is pure guesswork. The only safe prediction is that if the worst has not already happened, it is likely to occur soon, a line of reasoning which is not in the least radical but is based on sound and thoroughly established facts.

One other point should be made in connection with the pathology of acute appendicitis, namely, that its onward course is always hastened by the taking of purgatives. The late Lord Moynihan said that in all his practice he never saw a case of ruptured appendicitis in which purgation was not only an impressive antecedent but also a definite cause, and he frequently paid his respects to what he called "therapeutic" peritonitis. Aside from any other damage it may cause, the mere taking of a purgative introduces the element of procrastination, of waiting and seeing what it is going to accomplish; what it usually accomplishes is perforation and peritonitis.

Purgatives, unhappily, are not always the idea of the patient. Physicians are still giving them for abdominal pain. Of 1213 patients with acute appendicitis who had taken purgatives at the New Orleans Charity Hospital, 50 had taken them on the instructions of physicians, and the death rate in that group of cases was 26 per cent, though only one physician seems to have diagnosed the condition as acute appendicitis before he ordered a dose of salts. Moreover, though it must be granted that the point of view is unique, a British physician has recently violently defended the idea that an attack of acute appendicitis can be aborted by a dose of castor oil at the onset. He can properly be classified with the American physician who advocates the postponement of operation in most nocturnal cases of appendicitis until morning, one of the reasons being that a sleepy operating crew does not do its best work.

THE UBIQUITY OF ACUTE APPENDICITIS

The realization that acute appendicitis is the commonest of all surgical diseases is the first essential in diagnosis. The cumulative effect of reading about it in the daily papers is more striking than is the quotation of hospital statistics. Scarcely a week goes by that an emergency appendectomy is not performed at sea or that a seaman is not flown from ship to shore for operation. One of the weekly pictorial magazines, reporting the recent military maneuvers in Louisiana, ran a picture of an operation for acute appendicitis in a field hospital attached to one of the contending armies. That was not yellow journalism. In April, 1940, at the height of the ill-fated Norwegian campaign, a dispatch from London told how a squadron of British cruisers and destroyers, on duty in the North Sea, for an hour formed a protecting ring about a bat-

fleshship on which a seaman with acute appendicitis was having his appendix removed. There may be some argument as to the wisdom of risking thousands of lives to save one life, which perhaps itself was promptly lost in the new exigencies of war, but there can be no argument as to the ubiquity and urgency of acute appendicitis.

The world's greatest pugilist almost died from appendicular peritonitis—not acute appendicitis—two or three years ago. Last year the professor of animal industry at Louisiana State University went on a cattle-rescuing expedition into one of the flood-stricken parishes of the state. A week later he was himself rescued by the American Red Cross, desperately ill with acute appendicitis. The coronation of the late King Edward VIII of England was delayed because he was operated on for an appendiceal abscess. The late President Ebert of Germany died of the disease. One of the recent Louisiana scandal trials was halted because the chief of the defense staff developed an attack of acute appendicitis while court was in session and had to be operated on. The City of New York lost sixty thousand dollars because a case in which the testimony had occupied 14 weeks had to be declared a mistrial, one of the jurors developing acute appendicitis and requiring an emergency operation just as it was going to the jury.

Such instances can be multiplied, but they need not be. The point is perfectly clear. Acute appendicitis is a very frequent and a very urgent disease. It spares no race, sex, or social station. It may occur at any age from the cradle, or, more correctly, the womb, to the grave. It can occur at work, at play, during sleep—from which it frequently awakes the victim—on land, on sea, and I have no doubt in the air, on the golf course, at the moving pictures, in church, in the center of civilization, in the heart of the wilderness, and in the physician's office, where at least two patients of my acquaintance developed their attacks while waiting to consult their physicians for other complaints.

The experiences of these two patients demonstrate an important diagnostic point, that an individual with one disease can perfectly well develop another in the course of it. Failure to realize that fact is responsible for a great many deaths in acute appendicitis. In several thousand cases studied in detail at the New Orleans Charity Hospital, the disease developed under a great variety of circumstances: with the onset of and during menstruation, after tonsillectomy, during the act of defecation, immediately after taking a purgative, after the extraction of teeth, after an operation for cataracts, after vaccination, and in the course of malaria, paratyphoid and typhoid fever, pneumonia, influenza, measles, and pelvic inflammatory disease. In

a small but highly fatal group of cases it followed dietary indiscretions. What part such indiscretions play in the etiology of the disease is not known, but of the frequency of their occurrence, the diagnostic difficulties they introduce, and the number of fatalities they cause there can be no doubt. The natural tendency is to resort to purgation. Even if that dangerous practice be omitted, delay is almost inevitable, and is particularly serious in young children and in older individuals, in whom, for many reasons, dietary indiscretions are particularly frequent.

Acute appendicitis is relatively infrequent before the age of 12 years, and actually infrequent over the age of 40 years, though the mortality is higher in extreme youth and very much higher in middle and late life than in adolescence and early adult life. In 4207 cases studied at the New Orleans Charity Hospital over a nine-year period, individuals at the extremes of life provided just over a *quarter* of all cases of acute appendicitis, but well over *half* of the total mortality. Even more striking it is that individuals over 39 years of age, who provided just over 10 *per cent* of the total number of cases, provided considerably over a *quarter* of the total deaths, the mortality rising steadily with each succeeding decade.

THE DIAGNOSTIC DIFFICULTIES OF ACUTE APPENDICITIS

The difficulties in the diagnosis of acute appendicitis usually come early in the disease. In the obscure case some degree of hesitation is natural, but the physician who is hesitating over a diagnosis of acute appendicitis should not hesitate too long. The interval between observation should never be more than four hours, and could profitably be a great deal less, for the disease, as Stone points out, does not proceed on a railroad timetable, and a great deal of harm may be done in a short space of time, particularly in the obstructive variety. A practical consideration is that in the interim between observations what Bower has called the "lucid interval" and others the "dangerous period of calm" may ensue and may confuse the physician by the disappearance of symptoms. It may also so relieve the patient and his family that they refuse operation, on the basis that recovery is well under way.

Another important consideration in the diagnosis of acute appendicitis is that the disease is atypical in a very large proportion of cases. Some set the figure at 25 per cent. My own experience and observation would make me set it much higher, though the exact proportion makes no difference. What is important is to recollect that although in some cases of acute appendicitis certain symptoms appear in a certain chronological order, so that a lay person could make the diagnosis, in other cases,

certain symptoms or signs are missing, or the chronology is reversed or otherwise disturbed, or the whole clinical picture is bizarre and not at all suggestive of appendiceal disease.

It is curious that some of the physicians who have done the most to teach the essential considerations of acute appendicitis have also made dogmatic and incorrect statements about it which have done a great deal of harm. Thus Lord Moynihan made the unqualified statement that if pain be not the first symptom, appendicitis can be excluded. It was not the first symptom in 307 of the cases we studied at the New Orleans Charity Hospital. John B. Murphy insisted on a temperature elevation as a cardinal symptom of acute disease. Nearly 21 per cent of the patients we studied at Charity Hospital were fever-free. A leukocytosis of between 10,000 and 15,000 is usually stated to be the average, yet less than a third of the Charity Hospital patients fell into this group. The mortality in all of these atypical groups was considerably higher than in the typical group and well illustrates the danger of generalizations in this disease.

Differential diagnosis is frequently difficult. J. M. T. Finney, Sr., has listed 40 conditions which he has been called upon to differentiate from acute appendicitis, and one textbook mentions 60. Deaver listed acute abdominal conditions in the order of intensity with acute pancreatitis first and acute appendicitis last, though in the order of frequency he reversed the list and put pancreatitis last and acute appendicitis first. The widespread prevalence of the disease makes it imperative that the physician confronted with any patient in whom it is a possibility, however remote, should follow this same author's advice and think of acute appendicitis first, last and all the time.

Elman has suggested a sound plan of differential diagnosis. First, the physician should exclude medical diseases which may produce acute pain, such as coronary disease, primary peritonitis, amebic dysentery and typhoid fever. In this group of cases operation would be harmful and could be fatal. Second, he should exclude other nonsurgical diseases, such as spastic colitis and acute pelvic disease. In this group operation would be a mistake but would have no serious consequences. Third, he should exclude other surgical diseases, such as intestinal obstruction, perforated peptic ulcer and perforated Meckel's diverticulum. In this group, the diagnosis would be mistaken; but surgery is necessary, and no harm would be done provided the surgeon made an incision which enabled him to recognize and remove the disease process present. Not to operate in acute appendicitis, Elman points out, is the really serious error. To operate and find an appendix normal and no other lesion needing

surgical attention is a good mistake, provided that it is not made too frequently and that medical diseases have been excluded before the exploration is undertaken.

Before one can diagnose or exclude a disease, one must remember that it may be present. In acute appendicitis this means almost literally that the only patient who may not have the disease is the one whose appendix has already been removed. The physician who puts the burden of proof on the elimination of other conditions, particularly medical conditions, is entirely justified in recommending operation in any given case on the basis that he can not say positively that the patient does not have acute appendicitis. This is not radical advice. The mortality which attends exploratory laparotomy is nothing like the mortality which attends the nonsurgical treatment of acute appendicitis. Furthermore, as Elman has pointed out, the frequent argument between the surgeon and the pathologist as to the significance of minor microscopic and even gross changes in the appendix is futile. The surgeon who operates for acute appendicitis, even if the diagnosis is in error, or if the appendix, as is frequent in early obstructive appendicitis, shows no special changes, need feel no regret if the pathologist returns a report suggesting that the appendix need not have been removed.

CONSERVATIVE THERAPY IN COMPLICATED ACUTE APPENDICITIS

The treatment of acute appendicitis needs no discussion. The treatment is surgical—first, last, always, and immediately. As more than one writer has put it, the principle on which the physician should manage the case is that the only safe appendix is the appendix in a jar on the laboratory shelf. If the premise of the unpredictability of acute appendicitis be accepted, then the corollary is immediate operation when the patient is first seen, unless he be certainly on the road to recovery, and even then the decision not to operate immediately is sometimes bitterly regretted.

Generally speaking, I believe with Grey Turner that details of technique can not alter the outcome in acute appendicitis in any way whatsoever. Equally good results have been reported with the McBurney and the right-rectus incision, and with and without inversion of the stump. None of these things makes a difference in comparison with such other points as how soon the patient is seen after the onset of his illness, how promptly he is operated on, and whether or not he has had a purgative.

Although the complications of acute appendicitis are not the subject of this paper, a few words should be said about their management, particularly with reference to so-called conservative or ex-

pectant therapy, which never, of course, enters into consideration in the management of acute appendicitis.

During certain periods of our nine-year study of acute appendicitis at the New Orleans Charity Hospital the conclusion has unfortunately been inescapable that a moderate reduction in surgical mortality has been associated with a clear increase in the number of non-surgical deaths. It is fair to say that in at least some of these latter cases conservative therapy appears to have been employed on somewhat doubtful indications. The method is of very questionable value in young children, in individuals advanced in years, and in Negroes. With due realization that the institution of therapy in relation to the duration of illness is dangerous, its use within the first 40, and certainly within the first 24, hours of illness is questionable. Speaking categorically, I have no doubt that immediate operation in all cases of acute appendicitis, regardless of when the patient is seen or what complications may be present, will give better results in the long run and in the hands of most surgeon than will the practice of conservative therapy by men who do not thoroughly understand its limitations and implications.

Harvey Stone, who has recently taken the unqualified position that immediate operation is the only safe method in any stage of acute appendicitis, has well summed up the arguments in favor of that stand. The whole basis of expectant treatment, he points out, is the entirely unwarranted assumption that it is possible, without opening the abdomen, to recognize the nature and extent of the pathologic process. It is not possible. A ruptured retrocecal appendix may be clinically unrecognizable. The mass suspected of being an abscess may turn out to be an unruptured appendix surrounded by omentum. The diagnosis of spreading peritonitis may be made when the abdomen contains only cloudy fluid and the appendix is still intact. Arkush and Kosky's study supports these observations; in 48 per cent of the cases they studied a preoperative diagnosis of rupture was made, but the appendix was found at operation to be unruptured. If operation had been delayed in these cases, the appendix might have ruptured literally under the surgeon's eyes.

Stone's second point is the illogic of relying on Nature to take care of the damage done by a ruptured appendix without first removing the source of the damage; that is, the leaking organ itself. It is difficult for him to believe that a properly-carried-out operation is as harmful to the patient as is the continued entrance into the peritoneal cavity of infection from a perforated viscus. He takes decided issue with Lehman's feeling that the estab-

lishment of an abscess marks the end of the dangerous phase of the disease, and that many such patients, if properly handled, may not require surgery at all. This is certainly not the general experience.

Stone's arguments about expectant treatment are in entire accord with my own frequently-expressed opinion that the chief risk of peritonitis is the toxemia to which the ruptured appendix gives rise. That point was first made by Dieulafoy, but not a great deal of emphasis has been put upon it since, though it is one of the most cogent arguments against delayed operation at any age, and particularly at the extremes of life, when toxemia is particularly fatal.

Elman has also taken the position that all the surgeon has to decide in a case of acute appendicitis is whether the patient is in such condition as to withstand surgery. If he is, operation is done immediately, regardless of the state of his appendix. If he is not, operation is postponed until his condition is improved, and is performed the moment the reparative measures have had their maximum effect, again without regard to the state of the appendix. In such cases, the full therapeutic regimen should be carried out, including the liberal use of sedatives—with the realization that they may mask symptoms—infusions for the maintenance of the proper fluid balance, continuous intestinal decompression, postural drainage, the heat tent, oxygen therapy, sulfonamide therapy, and transfusions of blood or plasma as indicated.

Advice to seek prompt interval appendectomy should be issued to the patient who has had previous conservative treatment of appendiceal disease, whether it has been nonsurgical or surgical without removal of the appendix. Deferred appendectomy, as Coller and Potter express it, implies that appendectomy is going to be done. A patient whose appendix is still *in situ* after conservative therapy is quite as liable to subsequent attacks as is a patient who has had recurrent attacks of the simple acute disease; the only difference is that the former has used up more of his luck. Of 16 patients at Charity Hospital who had recurrent attacks after previous incision and drainage of the appendiceal abscesses, in one instance only three weeks before, the death rate exceeded 30 per cent.

SULFONAMIDE THERAPY IN COMPLICATED ACUTE APPENDICITIS

Over the nine-year period ending April 1st, 1939, 4207 surgical cases of acute appendicitis and its complications were treated at Charity Hospital of Louisiana at New Orleans, with a mortality of 5.6 per cent. This figure represents the total of four cumulative studies, in each of which there was only a fractional variation in the mortality. The 1492

cases comprising the last series (ending April 1st, 1939), in which the mortality was 5.3 per cent, may fairly be taken as typical of the results achieved in what might be called the presulfonamide period. A series of 756 cases analyzed for the period extending from January 1st, 1940, to June 1st, 1941, in which the mortality was 2.91 per cent, furnishes an interesting comparative illustration of the possibilities of the sulfonamide drugs, although they were used in only 132 of the 517 cases in which the disease had advanced beyond the simple acute stage.

The improvement in mortality can most readily be shown by comparing the ratio of deaths to cases in relation to certain phases of acute appendicitis in the most recent presulfonamide period (1492 cases) with the ratio in the 756 cases recently studied, when the use of sulfonamide drugs had become rather general (Table 1).

TABLE 1
Ratio of deaths to cases in two series of cases of acute Appendicitis*

	Pre-sulfonamide Era 1492 Cases	Sulfonamide Era 756 Cases
Total cases	1:19	1:34
Uncomplicated cases	1:63	1:120
Complicated cases	1:11	1:26
Appendectomy only	1:72	1:310
Appendectomy and/or other procedures	1:4	1:7
Males	1:20	1:50
Females	1:17	1:22
White	1:25	1:42
Colored	1:11	1:26
Under 13 years	1:14	1:36
13-39 years	1:29	1:102
Over 39 years	1:6	1:8
Operation within 12 hours.....	1:69	1:150
within 24 hours.....	1:58	1:55
within 48 hours.....	1:15	1:31
after 48 hours.....	1:12	1:20
With purgation	1:16	1:38
With repeated purgation.....	1:14	1:17

*The nearest whole numbers are used.

The circumstances in both series, aside from the difference in the number of cases, were not always similar. A smaller number of patients took purgatives and repeated them in the more recent series. Drainage was used in fewer cases, which increased the proportion of simple appendectomies performed. As was to be expected of cases in which operations were carried out by a large number of persons, the sulfonamide drugs were not used in all cases in which it seems they were indicated, and neither the dosage nor mode of application appears to have been decided on consistently logical grounds.

In spite of these facts, however, an improvement which, as a rule, was striking, was shown in practically every phase of the 756 most recent cases, and there seems no doubt that most of this im-

provement was due to the use of the sulfonamide drugs. The improvement achieved, moreover, was definite and not fractional, as any improvement which had occurred over the preceding nine-year period had always been. Finally, it was accomplished in a hospital in which conditions are admittedly unfavorable, in that it receives patients of the social strata most likely to ignore illness until it has become serious and most likely to treat it unwisely if they do pay any attention to it. To cut the mortality in half in a hospital of this sort is eloquent testimony to the possibilities of sulfonamide therapy in appendicular peritonitis, though it does not, as I said in the beginning, in any way solve the problem of acute appendicitis, which is to treat the disease before the development of complications which put the patient in jeopardy, no matter how they are treated.

THE SOLUTION OF THE PROBLEM OF ACUTE APPENDICITIS

When Bower began his work with acute appendicitis in Philadelphia in the late twenties, the mortality in the hospitals there was nearly 6 per cent. Within five years it had been cut almost in half, as the result of the campaign of public instruction on the subject instituted by the local medical society. This result, which I do not believe has been equalled anywhere in the country prior to the use of the sulfonamide drugs, bears out Hoffman's contention that acute appendicitis is a public-health problem.

There can not be very much argument over that point of view. It would be hard to think of a disease in which greater results could be achieved with a smaller expenditure of time and effort. In fact, isolated campaigns of education on this subject, in addition to the sustained campaign in Philadelphia, have demonstrated such remarkable saving of life as to make one wish that the large medical foundations would devote a small portion of their funds to this excellent cause. The problem of acute appendicitis would be solved and its challenge would be met if the lay public could be taught and if physicians would remember (1) that any abdominal pain may be the first symptom of acute appendicitis; (2) that food, fluids, and particularly purgatives, should be absolutely withheld in every case of abdominal pain until acute appendicitis has been excluded as a diagnosis; and (3) that prompt operation is the treatment for acute appendicitis as soon as the diagnosis is made or is suspected with good reason.

To revert to the point with which I opened this discussion, the simplest way to reduce and indeed practically reduce to nullity the mortality of acute appendicitis is, not to treat peritonitis with sulfanilamide or with anything else, but to increase the proportion of cases of uncomplicated acute appen-

dititis which come the way of the surgeon. That is what has been done in Philadelphia, and it is what can be done anywhere in the country when physicians of any locality set their minds and hearts and energies to that purpose.

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—1413 Union Building

ACUTE APPENDICITIS: A STUDY OF 1,006 CONSECUTIVE CASES

(F. C. Hill & A. C. Fellman, Omaha, in *Neb. Med. J.*, Oct.)

Creighton Memorial St. Joseph's Hospital is an institution of 500 beds, about one-fifth of which are free, and the surgery is done by some 35 men. This is a study of 1,006 consecutive cases operated on in the years 1934 to 1939. Only those cases were used in which the final diagnosis of the surgeon was acute appendicitis, and in all of

the cases included, operation was performed. A few patients with acute appendicitis, mild, were dismissed from the hospital without operation. There were also three cases which were not operated on because of the hopeless condition; these are not included.

The youngest patient in the series was two months of age, the oldest 78. *One-half of the total number, and two-thirds of the fatal cases, were of males.* There was a previous attack of appendicitis in one-third of the entire series and in not quite one-third of the fatal cases. About 90% of all the cases were simple acute appendicitis. Of the remaining 10%, 80% were simply ruptured and 20% were ruptured with peritonitis.

The average duration for all cases was 48.3 hours. For the fatal cases it was over eight days, and here is the most important cause of death in appendicitis.

The average temperature on admission was 99.6 for the entire series and 100.7 for the fatal cases. The average white blood count was 16,000 for the former, 14,000 for the latter.

After pain in the right lower quadrant, nausea was the next most common symptom, then tenderness in the right lower quadrant. Vomiting and distention was present in only 42 instances, and 7 of these in the fatal cases. All of the cardinal symptoms of acute appendicitis (pain in the right lower quadrant, nausea, vomiting, tenderness, rigidity and leukocytosis) were present in only one-third of the cases.

Distention in acute appendicitis makes us hesitate to operate. We believe that in the absence of distention, acute appendicitis should be operated upon regardless of the duration of the disease unless a palpable mass is present.

Generalized rigidity we have not found to be a positive indication of generalized peritonitis.

We believe that the safest procedure in a case of ruptured appendix is removal of the appendix, thus preventing continued peritoneal infection.

The appendix was removed in 98% of the entire series and in 83% of the fatal cases. In one-fourth of the cases drainage was used. A purgative was administered in 10% of the series; of the fatal cases 23% received a purgative.

In the cases from the Johns Hopkins Hospital, there was no mortality in 838 cases of simple acute appendicitis and in Omaha the mortality was 1% for 894 cases. At Johns Hopkins the mortality was 10% for the ruptured cases and in Omaha it was 18.75%; but for the entire series the mortality in Omaha was lower than at Johns Hopkins. In Omaha 10% were ruptured on admission and at Johns Hopkins 36%.

SYPHILIS RATE 4.52 PER CENT

(*J. A. M. A.*, October 18th)

A rate of 45.2 cases of syphilis per thousand persons examined was found through physical and routine serologic blood tests of the first million selectees and volunteers called for classification under the Selective Service Act of 1940.

The greatest prevalence was reported by Florida and South Carolina, with rates of 170.1 and 156 cases per thousand respectively. The lowest rate, of 5.8 per thousand, was reported by New Hampshire. Seven Southern states and the District of Columbia reported rates in excess of 100 cases per thousand. For the country as a whole, the prevalence of syphilis among Negro selectees and volunteers is thirteen times that for the white.

HE IS RICH who has enough to be charitable; and it is hard to be so poor, that a noble mind may not find a way to this piece of goodness.—Dr. (Sir) Thomas Browne.

Present Status of Fever Therapy*

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IN THE PAST TEN YEARS over 650 papers and articles have been published on the treatment of disease by artificially induced fever. It is the aim of this paper to summarize these, and to evaluate the results of a few of the recent and more comprehensive papers, and, in addition, to offer some comments based on my own experience in the Fever Therapy Department of the Charlotte Memorial Hospital and in larger departments in Washington, New York and Chicago.

In our department at the Charlotte Memorial Hospital we use the improved inductotherm fever cabinet. The patient's temperature is elevated by electromagnetic induction and maintained by an insulated air-conditioned cabinet. The air in the cabinet is warmed, circulated and maintained at a humidity approximating 100 per cent. An indwelling rectal bulb is connected by a wire to a constant-indicating electrical thermometer at the head of the cabinet so that the technician may know at every instant exactly what the patient's rectal temperature is without disturbing him.

Hyperpyrexia, as induced by fever cabinets, has been applied to more than fifty diseases in the past ten years. The results, in many of these conditions, have been disappointing, whereas the benefits derived in other diseases proved this means of therapy to be of extreme value.

GNOCOCCIC INFECTIONS

Since the advent of the sulfonamide drugs the treatment of gonococcic infections has been greatly improved. The rapidity with which many cases yielded to the intelligent administration of these drugs obviated, to a great extent, the need for the use of accessory therapeutic agents. However, several circumstances indicate that we have as yet no specific cure for gonorrhea. These circumstances are: (1) the persistence of the asymptomatic carrier, (2) the development of chemotherapy-fast strains of the gonococcus and, (3) the occurrence of relapse after apparent cure.

The carrier state is one of the most serious problems created by chemotherapy. Under chemotherapy the urethral discharge disappears in an average of three days. It is difficult after this time to obtain a positive smear, but culture of the urine and prostatic secretions, when the proper technic and culture media are used, is always positive for the gonococcus for a period of from two to fifty days, with an average of seventeen days for sulfathiazole-treated cases.¹ Chemotherapy has de-

stroyed the value of the former provocative test. The patient who has gone into a clinically negative phase under chemotherapy can go through alcoholic, sexual, or exertion provocation without a recurrence of symptoms, despite the fact that cultural studies still give positive results. Hence the asymptomatic carrier may unknowingly transmit his sulfonamide-fast strain to a second person. The second person, in turn, may become an asymptomatic carrier. Transfer of this organism to a sexual partner may lead to clinical evidences of gonorrhea which will not respond to chemotherapy.¹

In a survey by Deese and Young of 2,727 well analyzed cases only 1,848 (68%) could be classified as immediate cures, and an additional four per cent as delayed cures.

Numerous investigations have demonstrated the value of artificial fever in the treatment of gonorrhea. The best results are now reported following the use of the single, long fever-session, combined with the use of one of the sulfonamides. Belt and Folkenberg reported 80 per cent of cases cured by sulfanilamide or its derivatives, alone. Of the 20 per cent of cases resistant to chemotherapy they cured 87 per cent by a single, long session of artificial fever, combined with chemotherapy. By determining the thermal death time of the organism in cultures an incidence of cure approaching 100 per cent may be obtained.

In 1939 the Section on Urology of the Mayo Clinic reported that 90 per cent of their cases responded to sulfonamides alone. The remaining 10 per cent were referred for fever therapy. An average of 1.1 treatments was given resulting in a cure in 95.2 per cent.

Kendall and his associates reported on the treatment of eighty-three patients suffering from complications of gonorrhea, resistant or intolerant to chemotherapy. Of those refractory patients receiving fever therapy alone 62.5 per cent were cured following a single treatment. When combined with sulfanilamide or Promin* given for eighteen hours before a single fever-session in thirty-one unselected cases, all thirty-one cases were cured. Domestic and business reasons, at times, may make prompt and certain cure of gonorrhea an urgent need. Fear of divorce or loss of job, humiliation etc., may lead a patient with acute uncomplicated gonorrhea to seek the only method whereby he could be cured in

*Promin is a new sulfonamide not yet released for distribution. (Parke, Davis & Co.)

*Presented to the meeting of the Mecklenburg County (N. C.) Medical Society, held at Charlotte, October 21st.

twenty-four to thirty-six hours. Gonorrheal arthritis responds dramatically to fever therapy and should be treated early to prevent permanent damage to the involved joint. Gonorrheal ophthalmitis which does not show immediate improvement under chemotherapy should be given fever therapy promptly before the eye is permanently damaged.

BACTERIAL ENDOCARDITIS

Gonorrheal endocarditis is a rather rare and formerly almost hopeless complication of gonorrhea. Only about seven or eight well authenticated cases have ever been reported as recovered.²

I have recently treated successfully a very severe case of acute gonococcal septicemia with endocarditis. This patient received three treatments at temperatures ranging between 106.6 and 107°, several different sulfonamides, including Promin* (sodium P-P'—diaminodiphenylsulfone—di-dextrose sulfonate) by intravenous injection following the technic recommended by Kendall et al. as mentioned. After another two or three months have elapsed I shall prepare a case report on this patient. His temperature has now been normal for eight weeks. His sedimentation rate is normal; he has gained twenty-five pounds and is planning to return to work next week.

Recent reports³ on the treatment of subacute bacterial endocarditis by the use of fever therapy combined with chemotherapy are at least encouraging. Spontaneous recovery has been reported variously as occurring in from one to three per cent of cases. Of a series in which sulfanilamide was used alone the recovery rate was six per cent. Chemotherapy, plus fever therapy, has been reported as successful in 16 per cent.

PHLEBITIS

In acute or chronic phlebitis three sessions of artificial fever of only 103.5° for three hours will result in prompt relief of tenderness, pain and edema. The course of the acute illness is shortened and the disability of the chronic case greatly reduced.⁴

NEURITIS AND ARTHRITIS

The gratifying relief of the intractable, lancinating pains of tabes dorsalis brought about by fever therapy led to its trial in a variety of painful neuritic and radicular affections. Extensive evidence has shown that artificial fever is far superior to any form of local heat production in combating the pain and relaxing muscle spasm.⁴ Favorable reports include such conditions as sciatic neuritis, brachial neuritis, toxic infectious polyneuritis, herpes zoster and arthritic disease with secondary neuritis or neuralgia. Acute infectious arthritis shows prompt and permanent benefit. Chronic atrophic or rheumatoid arthritis is usually benefited only tempo-

rarily if at all and I do not recommend fever therapy as a rule.

CHOREA AND RHEUMATIC FEVER

The distressing movements of Sydenham's chorea ceased in 88 per cent of cases, treated by artificial fever⁵—an average of four treatments of short duration. In rheumatic fever relief of pain and swelling of joints was frequent and the sedimentation rate and leukocyte count were promptly reduced.⁶ In a comparative study against a control series of cases, the fever-treated group showed a strikingly smaller percentage of cases of polyarthritis developing, and of deaths from rheumatic carditis. Further analysis of the cases of patients who had heart disease showed that the severity of the cardiac lesion was considerably greater in the untreated group. The cases reported have not been in sufficient number to justify conclusions. Acute or chronic rheumatic heart disease can be safely treated, in many cases with benefit.

Even better results have been reported in chorea⁶ and neuritis when thiamin chloride was given intravenously in conjunction with the fever treatments.

OCULAR DISEASES

Ocular gonorrhea, ocular syphilis and stubborn cases of iritis are well established indications for fever therapy. Cases of interstitial keratitis, acute iritis, and acute exudative choroiditis which have resisted the usual forms of treatment may be cleared up entirely by only two or three treatments. In a recent special article on syphilotherapy,⁷ H. N. Cole states that the best known treatment for interstitial keratitis is artificial fever plus vitamin B₂ by mouth.

BRUCELLOSIS

Several investigators have noted that in a small series of cases of brucellosis or undulant fever there has been a rather striking response to fever therapy. About 80 per cent exhibited definite clinical remissions with prompt disappearance of symptoms.^{5, 8}

SYPHILIS: PRIMARY AND SECONDARY

When artificial-fever therapy is combined with chemotherapy in early syphilis the results are better than with either alone. The dark-field examination will disclose no spirochetes after the first fever session and the patient is thus rendered non-infectious in a very short while. The quantitative Kahn test, after a brief initial rise during the first week, shows less and less evidence of syphilis during the next three to six weeks.

WASSERMANN-FAST SYPHILIS

Howles⁹ directed attention to the fact that cases which continued to exhibit a positive Wassermann in spite of the usual anti-syphilitic treatment had a focus of infection which had become resistant to

arsenic and heavy-metal therapy. A careful study using all available diagnostic methods will reveal most of these lesions before clinical symptoms develop. In asymptomatic neurosyphilis not responding to routine chemotherapy, fever therapy should be given, since accumulated clinical evidence shows that fever therapy given in this stage adequately protects against clinical neurosyphilis.

PARESIS

The value of fever in dementia paralytica has been well established since 1918 when Wagner von Jauregg published his paper on the dramatic results from malaria inoculations.

When equally as brilliant results began to be reported for fever induced by artificial means, certain authorities in the field of syphilology predicted that the relapse rate after treatment by physically-induced fever would be higher than that in cases treated with malaria. In an attempt to settle this question a number of clinics formed a group for coöperation in the study of this important problem. The coöperating organizations included the Mayo Clinic; Central State Hospital, Indianapolis; Colorado Psychopathic Hospital; Miami Valley Hospital, Dayton, Ohio; Boston Psychopathic; Strong Memorial, Rochester, N. Y., and a dozen others. These clinics pooled their records for analysis. A total of 1,420 patients' records were analyzed.

Conclusions as to clinical results were based on the percentage of remissions at the end of the first, second and third year of treatment-observation. They also classified their cases as mild, intermediate and severe, according to the stage of the disease. It will be noted that the total remission rate for the three-year period was higher in the second two classifications, for the artificial-fever than for the malaria cases and equal in the first or mild group.

A strange paradox was found in this series in the percentage of serological reversals. The group report that the reversals of both spinal fluid and blood from positive to negative occurred twice as frequently in the cases treated by malaria and chemotherapy as in the cases treated by artificial fever and chemotherapy. The significance of this is lessened by several factors: (1) according to their own figures, where no chemotherapy was used the serologic reversals were twice as numerous in the artificial-fever as in the malaria group; (2) a check-up revealed that the malaria group had received a greater amount of chemotherapy, (3) many of the cases included in the artificial-fever group were those cases which were treated during the period of experimentation with fever therapy. The optimum height and duration of fever had not then been determined, and according to present standards was inadequate. (4) Since clinical suc-

cess was not accompanied by complete serological reversal in 52 per cent of the cases it follows that clinical success is not necessarily dependent on serologic reversal. They did not include quantitative improvement of serum reactions in their statistics.

Among other conclusions from this study, the coöperative group observed that the death rate during treatment *and* for the period of three months after treatment was over 60 per cent higher in the malaria group than in the artificial-fever group.

Finally they found that the rate of relapse was only five in a hundred for the entire series, and essentially the same for the two types of treatment.

Ewalt and Ebaugh¹⁰ of the University of Colorado School of Medicine made a comparative study of artificial fever therapy and therapeutic malaria in 232 cases of dementia paralytica. I shall quote directly from their conclusions:

"The follow-up therapy in the two groups has been as nearly identical as the vagaries of clinical practice will allow. The method of therapy with artificial fever has been safer and has been productive of better results. Improvement in the care of patients during malaria therapy and more attention to follow-up medication has improved the results of therapeutic malaria in our clinic, although these results still remain inferior to those obtained with artificial-fever therapy.

"Patients with physical contraindications to therapeutic malaria may, in many instances, be safely treated with artificial-fever therapy. The serologic responses roughly parallel the clinical results in the two series."

That is to say that in this study the serologic improvement as well as the clinical improvement had been greater in the group treated by artificial fever.

THE ECONOMIC FACTORS

The economic factors involved are always important. The patient to whom therapeutic malaria is given must undergo continuous hospitalization for at least three-and-a-half to four weeks. Daily visits by the physician must be added to his bill. He is often weak and anemic after the course of treatment and must undergo a period of convalescence.

With the newer technic for the treatment of dementia paralytica by artificial fever the patient may receive three or four hours of treatment once a week and in early cases is able to return home the same day of the treatment, and to work the next day if he so desires. I have had several who could do this.

Recently I have had three men show dramatic clinical improvement after one treatment. All three

had developed severe symptoms rather suddenly. They exhibited tremor, loss of memory, halting speech, unsteady gait, coarse behavior habits, impaired coordination, and loss of judgment. The day following the first treatment each man was able to write for the first time in several days, or weeks. Each could walk, talk, eat and carry out coordination tests with relative ease. In two or three weeks they had returned home and resumed at least part of their former occupations. They had lost neither weight nor strength. Think how much these men were saved by not having to be committed to a mental institution!

Besides the clinical and economic advantages of artificial fever over malaria there are others. (1) There is considerable variety in the response of individuals to malaria; the degree of reaction is unpredictable and while it can be better controlled now than formerly one can not choose the hour and duration and degree of temperature as can be done with artificial fever. (2) Patients with complicating heart, lung, liver and kidney disease can take carefully graded doses of artificial fever who could not stand malaria. (3) The arsenicals can no be given during malaria treatment. (4) Fever therapy seems to increase the tolerance of drug-sensitive individuals so that many can take larger doses without toxic reaction.¹¹

TABES DORSALIS

In thirty-one cases of tabes dorsalis, of the most severe type, many with resistant chronic symptoms, 16 (52%) had complete relief from all the very troublesome symptoms.¹² Eleven (35%) had improvement as to all principal symptoms, with disappearance of some of them; while only four (13%) were unimproved. Neuritic pains were relieved for twenty-four of the twenty-eight patients. Gastric crises were completely or partially relieved in eleven out of fifteen cases. Many of the patients most benefited had failed of improvement under treatment by other methods. Some were physically debilitated, most of them elderly. In some cases ataxia and urinary incontinence also responded with improvement.

THE DEGREE OF SAFETY OR RISK IN FEVER THERAPY

A few years ago, in one of North Carolina's leading hospitals, in a very brief time period, two patients died while taking fever treatment. I do not know how well the cases were reported, but the medical men from this institution seem satisfied with the explanation that it was to be expected of such a hazardous treatment. I do not know the cause of death in these two cases. I do know the cause of two other deaths which have been attributed to fever therapy in two other hospitals. The person actually giving the fever treatment had not

the proper training, was not well enough acquainted with the potential dangers, was trying to do other things during the treatment, and was not properly supervised. I worked at one clinic in Chicago where treatments had been given almost daily for the past eight years without one fatality. There were no sequelae.

Troutman reported only one death in 5,500 fever sessions given to 985 patients. This single death occurred back in 1936 before the newer technic came into use. What other major therapeutic procedure can claim a mortality rate so low?

CONCLUSIONS

1. Artificial-fever therapy, when carried out in a well equipped institution, by well trained personnel under competent supervision, is a procedure of relative safety and carries a remarkably low mortality.
2. Artificial-fever therapy is not a specific that will supplant other established methods of treatment.
3. Its widest usefulness is as an adjuvant to other methods of treatment in difficult and complicated cases where resistance to the usual treatments is evident.
4. Occasionally fever therapy is a life-saving measure where all other methods have failed.
5. Artificial-fever therapy combined with chemotherapy will shorten the necessary period of hospitalization or the period of disability in numerous diseases, among them: syphilis, gonococcal infections, certain types of asthma, arthritis, neuritis and phlebitis; undulant fever; rheumatic fever; chorea; lymphogranuloma venereum, and endocarditis.
6. In asymptomatic neurosyphilis not responding to routine chemotherapy, fever therapy should be given, since accumulated clinical evidence shows that fever therapy given in this stage adequately protects against clinical neurosyphilis.
7. In paresis artificially-induced fever combined with chemotherapy is the treatment of choice.

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Hyperparathyroidism*

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A SHORT WHILE AGO two patients with similar symptoms were admitted to a well-known hospital in this state and within a space of ten days both had parathyroid adenomas removed. This must constitute a record for a disease that is very rare, or, what is more probable, rarely diagnosed.

This subject should be of interest to everyone here because the symptoms are so varied, multiple and chronic that, no matter what type of work the physician does, he is liable to encounter the disease.

The relationship between the parathyroid glands, calcium metabolism and pathologic conditions of bone has been proved within the past sixteen years. Previous to 1925, the physiology of parathyroid tissue being obscure, medical science approached the syndrome now recognized as hyperparathyroidism by describing merely its end results. A pathologic entity known as generalized osteitis fibrosa cystica had been observed from time to time for thirty years following von Recklinghausen's original description of the condition. Mention of coincident parathyroid tumor was made occasionally in the pathologic reports of osteitis fibrosa, but its significance was not suspected. Experimental study of the glands was devoted almost exclusively to the effects of extirpation. The complex calcium and phosphorus metabolism through which the parathyroid dyscrasia influenced the skeleton was unknown.

In 1925 the results of three important attacks on the problem began to appear. Collip announced the discovery of the parathyroid hormone and the preparation of a potent extract. This made experimental study of parathyroid activity possible. Mandl proved the etiologic relationship of the glands to osteitis fibrosa cystica. He implanted parathyroid tissue in a patient who had osteitis, made him worse thereby, then removed the implant *plus a parathyroid adenoma*, and cured his patient. Then Aub and his coworkers, by a series of studies in mineral metabolism, established the links by which the glands and skeletal changes are related. The medical profession has been quick to apply this knowledge, and the literature of the past few years contains numerous case reports including metabolic studies on osteitis fibrosa cystica, the classic form of hyperparathyroidism. There have been in addition excellent summary articles on the subject by Barr and Bulger,¹ Albright and Aub,² and Jacobs and Bisgard.³

Most of the cases of hyperparathyroidism reported have represented the advanced, classic form. This type of the disease offers no diagnostic difficulties. It is one of our chief objects in this discussion to point out that other forms of hyperparathyroidism are not rare curiosities, but conditions that every practitioner will meet, and not infrequently. The diagnosis must be considered and ruled in or out when any of a whole list of presenting symptoms of the most varied nature is encountered.

Hyperparathyroidism is a disease that is usually due to the excessive functioning of an adenoma of the parathyroid glands; however, certain cases present only hyperplasia of all the parathyroid tissue. As a result of the increased production of the hormone, there is a disturbance in the metabolism of calcium and phosphorus. The easily measurable manifestations of this disturbance are an increased serum calcium level and a decreased phosphorus level, and an increased excretion of both elements in the urine.

The bones are the only storehouse for calcium and phosphorus in the body, so this increased loss in the urine leads to a demineralization of the bones. They become porous and later fibrous areas may develop with cyst formation. With the increase in osteoclasts, osteoclastomas or benign bone tumors may develop.

The increased excretion of calcium and phosphorus in the urine not infrequently leads to the formation of urinary calculi. In some instances the calcium phosphate precipitates occur in the kidney parenchyma. The peculiar manner in which calcium is deposited in the kidney as revealed by röntgen rays presents a picture which is probably pathognomonic of hyperparathyroidism. It forms delicate rosette shadows which we have not seen described in any other condition.

The replacement of so much of the bone marrow cavity with fibrous tissue leads to a decrease in the hemopoietic elements and hence to anemia and occasionally leukopenia.

The symptomatology may be best described by dividing the cases into three groups: 1) Those due to hypercalcemia per se. Just as *hypocalcemia* causes an increased excitability of nerve-muscle apparatus (tetany), so *hypercalcemia* causes the opposite—hypotonia, lassitude, constipation, weakness, easy fatiguability and weight loss—the general symptoms of neurasthenia. 2) Those due to skeletal involvement. These may vary from cases

*Presented to the meeting of the Mecklenburg County (N. C.) Medical Society, held at Charlotte, October 21st.

showing no symptoms to those in which the skeleton has to a great extent lost its function. A spontaneous fracture is often the event that first calls attention to the disease. Bone tenderness and bone pain, usually attributed to arthritis, neuritis and the like, have in most instances been present a long time. Bone tumors due to cysts may be early manifestations. Bone deformity is usually a late manifestation, except as regards the spine. There may be no skeletal changes in hyperparathyroidism demonstrable by x-rays. The chief röntgen evidences, when such exist, are pictures of increased rarefaction, deformities, cysts, tumors and fractures. Only the first of these is fundamental; the other four are secondary. Being a metabolic disease, it must exert its fundamental action, *demineralization*, on the entire skeleton, if at all. Therefore, in a doubtful case, it is essential to decide at once whether one is dealing with a generalized or a localized disease. 3) Those due to hypercalciuria and hyperphosphaturia. Polyuria and polydipsia are present in almost all cases and are usually attributed to the increased excretion of phosphorus and calcium (analogous to diabetes mellitus). Renal colic or some other manifestation of nephrolithiasis may be the first and only symptom. Any case of *recurrent renal stones*, certainly one of *bilateral renal stones*, demands a thorough investigation to rule out hyperparathyroidism. The symptoms, signs and laboratory findings of Bright's disease may be present when there is extensive renal parenchymal involvement; however, this is rather unusual.

Once the diagnosis is suspected, its confirmation or exclusion depends on the chemical laboratory. Hyperparathyroidism is almost unique in giving the combination of a *high serum calcium* and a *low serum phosphorus* level. Other conditions; *e. g.*, multiple myeloma and metastatic malignancy, may produce a high serum calcium; but when they do the serum phosphorus also is usually elevated. Serum phosphorus *below 3.5 mg. per cent* and serum calcium *above 11 mg. per cent* should be regarded with grave suspicion, especially if repeatedly obtained.

An increased urinary output of calcium and phosphorus is one of the commonest manifestations of the disease, but determinations of the excretion of these elements are time-consuming and seldom necessary.

The plasma phosphatase level, probably an index of the degree of actual bone degeneration or osteoblastic activity, is elevated in hyperparathyroidism. The normal level is 2-4 Bodansky units. The determination is of most value in following the progress of a case.

Just as hyperparathyroidism mimics many conditions, so a number of conditions mimic hyperparathyroidism. In our experience senile osteoporosis, multiple myeloma and metastatic malignancy have given more trouble in differential diagnosis. With careful studies, however, these can usually be differentiated.

The treatment is surgical removal of the tumor. The chief operative difficulty lies in finding the tumor. The surgeon should know where to look for the normally situated, and the possible or probable aberrant, glands. Unlike thyroid adenomas, parathyroid tumors mold themselves surprisingly well into crevices, as between the esophagus and trachea. Before undertaking this operation, the surgeon should be well qualified in neck and mediastinal anatomy and surgery. There is no time like that of the initial operation to find the tumor.

Case Reports

Case 1.—A 34-year-old farmer comes complaining of vague aching pains in his lower back, legs and chest for previous 9 months. Two months ago his left clavicle was fractured in a minor accident. He had been extremely weak during the entire illness, and lost 25 pounds. He was poorly developed, malnourished, pale and appeared chronically and seriously ill. The positive physical findings were kyphosis of the lumbar spine, pallor of the skin and mucous membranes, tenderness over both tibiae, enlargement of right lobe of the thyroid to twice its normal size, thickening and hardening of the radial vessels, generalized hypotonia and hypoactive tendon reflexes.

The hemoglobin was 7.8 gms. (50%); red blood cells, 2,500,000; white blood cells, 5,000, with a normal differential count. The urine was negative *except for a repeatedly positive Bence-Jones protein*. The serum calcium was 14.6 mg.%, serum phosphorus 2.3mg.%, the phosphatase, 26.4 Bodansky units. The x-ray pictures showed a severe degree of decalcification of all the bones with areas of varying degrees of rarefaction. There were pathological fractures of several ribs and the right fibula.

Several observers thought this a case of multiple myeloma, especially in view of the Bence-Jones protein in the urine; others leaned to parathyroid adenoma. After much discussion, operation was done and a parathyroid adenoma removed, with relief of all symptoms.

Case 2.—A white housewife of 49, complains of pains in the right chest and tiredness for a year's duration. She had been seen in another hospital 10 years before where a diagnosis of hydronephrosis on the right with calcareous deposits in both kidneys was registered. At this time a serum calcium of 12 mg.% was reported. For the next four years she felt well and did her own housework. Then began a dull pain under the right shoulder blade that came and went, and one year later persistent pains in the anterior chest. Six months before admission to the hospital, she became very weak and lost 30 pounds despite a good appetite. She had no polydipsia or polyuria. She was a small undernourished woman, who did not appear at all ill. At the left lower pole of the thyroid there was a round, firm nodule 2 cms. in diameter. The physical examination was otherwise quite negative.

Red blood cells numbered 3,500,000; hemoglobin, 10 gms. (66%); white blood cells, 6,200, differential count normal. The urine was negative. The correct diagnosis was not suspected until a röntgen-ray picture of the kidneys showed these organs which diffuse mottled deposits of

calcium. All of the bones showed a generalized loss of calcium. The serum calcium was 20 mgs.%, the phosphorus 4.7 mg.%. Repeated three days later, the calcium was 22 mg.%, the phosphorus 4.8 mg.%. The phosphatase was 23 Bodansky units. The diagnosis of parathyroid adenoma was made and operation advised. Because of a mild upper-respiratory infection with temperature of 100°, operation was postponed a few days. Rather suddenly complaint was made of great weakness and nervousness and, in contrast to her former cheerfulness, the patient became tearful. These symptoms continued for the next 48 hours; then she suddenly called the nurse who found her cyanotic and gasping for breath. She expired a few minutes later.

Autopsy revealed a cyst and partly calcified necrotic tumor of a parathyroid gland. There was widespread injury, necrosis and calcification of the connective tissue in the parenchymatous organs and in the arteries. There was extensive myocardial injury and necrosis. Calcification was present in the kidneys and myocardium.

The autopsy findings in this patient parallel very closely the pathologic changes which Cantarow, Stewart and Howell describe in dogs poisoned with parathormone.

This case has been reported elsewhere as one of parathormone poisoning.

Case 3.—A 48-year-old white housewife admitted to the Charlotte Memorial Hospital, November 27th, 1940, complaining of generalized pain of 4-years duration. The pain started in the thighs and gradually involved calves, arms and chest. They were described as being dull and boring. There was never any pain, swelling, or redness of the joints; however, she had been treated for arthritis for 4 years. She had been bed-ridden for one year. For six months her fingers had been painful and the tips had enlarged. For three weeks nausea and vomiting had been troublesome.

The patient appeared chronically ill. The skin and mucous membranes were pale, bitter complaint was made of pain in her chest upon slight change in position. There was a 1-cm. nodule in the left lobe of the thyroid. There was marked bowing of the radius and ulnar bones bilaterally with a pronounced peculiar enlargement of the distal phalanges of the fingers, which did not appear to be typical clubbing.

The hemoglobin was 11 gms.; red blood cells, 4,300,000; whites, 6,000—differential count normal. The serum calcium was 19 mg.%, phosphorus 3.5 mg.%, phosphatase 23.2 Bodansky units.

X-ray pictures showed generalized decalcification with a granular appearance of all the bones. There were several fractured ribs. There was a staghorn calculus in the right kidney and bilateral calcification in the kidney parenchyma.

Exploratory operation was done and a parathyroid adenoma removed. After a rather stormy postoperative course, improvement was started, which has continued. She was seen again 4 months later, at which time her serum calcium was 9.14 mg.%, phosphorus 3.2 mg.%.

COMMENT

Hyperparathyroidism must be considered as a possible or probable cause in cases presenting the most varied symptomatology. This is especially true of those bringing to mind the word neurasthenia.

Although suspected from other evidence, the final diagnosis is made on evidence adduced in the chemical laboratory.

Röntgenograms can only add confirmatory evidence unless the typical rosettes of calcareous de-

posit pathognomonic of the disease are demonstrated in the renal parenchyma.

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TETANY

(J. A. Schindler, Monroe, in *Wisc. Med. J.*, Oct.)

The four types of tetany are:

1. The parathyroid, which occurs when parathyroid tissue is extensively removed.
2. The infantile, usually, though not invariably, associated with rickets and includes the tremors and cyanotic spells of the newborn.
3. The nephritic, sometimes seen with severe nephritis with lowering of blood calcium.
4. The tetany of alkalosis, the only type with a low calcium content, most commonly seen with the alkalosis resulting from overbreathing by neurotic women, relieved by rebreathing carbon dioxide from a paper bag or by administering an acid salt.

Treatment of the three types due to a low blood calcium.—Milk, cheese, butter and green vegetables, plus calcium chloride, lactate or gluconate. New and apparently effective is the double salt of calcium lactobionate and calcium bromide. The best time for oral administration of calcium is two or three hours after meals, when the acidity of the small bowel is increased, acid calcium phosphate is formed and more absorption occurs. In the presence of gastric alchlorhydria the absorption of calcium is deficient and the patient may show a low blood calcium from no other cause. Vitamin D is essential for calcium absorption: viosterol and calciferol are potent forms; most potent of all is dihydrotachysterol. The level of blood calcium must be carefully watched during its administration. For this purpose, blood calcium determinations are unnecessary, since the rough calcium determination devised by Sulkowitch is adequate.

The most effective measure for raising the blood calcium content is the administration of parathyroid hormone.

Hyperparathyroidism may result from primary adenoma of the parathyroids or from hypertrophy of unknown cause. Besides the changes in bone, loss of appetite, diarrhea, vomiting, dullness, drowsiness and general muscular flaccidity are seen.

Hypocalcemia has been diagnosed prior to a blood calcium determination by prolongation of the Q-T interval on the electrocardiogram.

DR. WILFRED PICKLES, of Providence, tells us in the *R. I. Medical Journal* for October: In August, 1840, workmen repairing the chancel of St. Peter's Mancroft accidentally broke open a coffin which proved to be that of Sir Thomas Browne. After a careful examination of the remains by an archaeologist, the skull was removed by one of the workmen and later found a resting place in the museum of the Norfolk and Norwich Infirmary. Here it was exhibited together with these lines from Sir Thomas's *Hydriotaphia*—"To be knaved out of our graves, to have our skulls made drinking bowls, and our bones turned into pipes are tragical abominations escaped in burning burials."

Factors in the Diagnosis and Treatment of Uterine Cancer*

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From the Service of Dr. William P. Healy, Memorial Hospital, New York City

CARCINOMA of the cervix forms the largest group of malignant lesions arising in the female genital tract. While rare cases are reported in children, and young women in the third decade of life are occasionally the victims of this disease, over 60 per cent of all cases occur between the fortieth and sixtieth years. The symptoms for which the patient usually consults her physician are irregular vaginal bleeding and vaginal discharge. These are symptoms, of course, of ulceration and infection, and in a fairly large group of cases we have found these symptoms to have been present for over ten months on the average before the patient sought any medical advice. Unfortunately many women over forty are not alarmed at the occasional occurrence of irregular vaginal bleeding. Because there are no symptoms in early cancer of the cervix, and because the symptoms of advancing disease are ignored for long periods of time, it is little wonder that between 70 and 75 per cent of all cases are in an advanced stage of disease when first seen. In the average case the diagnosis is easily made clinically. The cervix is enlarged, ulcerated, infected and friable. Bleeding occurs from slight trauma; the uterus may be partially or completely fixed by parametrial infiltration. The diagnosis should always be confirmed by histologic study of biopsy specimens. A survey of the histology shows that about 97 per cent of all cases of primary cervix cancer are of the squamous-cell type, or, as Ewing prefers to call them, epidermoid carcinomas. About 3 per cent, of cervix gland origin, are adenocarcinomas. The epidermoid carcinomas are graded, after the work of Ewing, Broders and others, according to their general cell structure. Those most adult in character, showing frequent pearl formation, are grade I. Those showing most change from the normal, anaplastic or embryonal in character, are grade III, while those showing cell characteristics midway between these groups are grade II. Over 60 per cent of all lesions of the cervix are grade II epidermoid carcinomas, while 15 per cent are adult in structure and 15 per cent are anaplastic in structure.

The extent of disease present clinically is grouped into four stages, under the League of Nations Classification. Stage I is that group of early cases where the disease is limited to the cervix. Group IV embraces those hopelessly advanced cases where the uterus is completely fixed, the parametrial

structures rigidly held in position with disease; the bladder or rectum is invaded, and possibly distant metastasis has occurred. The other groups refer to various stages of disease between early and hopeless.

Treatment of carcinoma of the cervix is now acknowledged by all gynecologists, at least on this continent, to be strictly a radiological problem. In the past various methods were used. Cautery, chemicals and surgery have all been advocated and largely discarded. Prior to the introduction of radiation therapy best results were obtained by the Wertheim radical pan-hysterectomy. Since only the early, or at most borderline, cases were surgically operable, the prognosis for a moderately advanced case was hopeless. In the hands of experts, the Wertheim operation had a mortality of 20 per cent, and of those surviving operation less than 50 per cent were cured of their disease. The best figures, those of Wertheim himself, showed an absolute cure rate of less than 19 per cent, with an operative mortality of 19.5 per cent. A noted English gynecologist in 1917 reported an absolute cure rate of 10.2 per cent, with an operative mortality of 28 per cent, by Wertheim hysterectomy.

For some time past, at Memorial Hospital, we have carried out external pelvic x-ray therapy prior to the use of radium in practically all cases of carcinoma of the cervix. The advantages have been several: infection in the cervix, which is always present, has been cleaned up; the bulk of the primary lesion has been reduced; and, as a result of both these effects, morbidity due to the manipulation necessary to the insertion of radium has been markedly reduced.

Stripped of all qualifying factors, analysis of a large series of cases at Memorial Hospital showed a five-year salvage of 27.5 per cent. The single most important factor was found to be early diagnosis. While the early cases formed only 15 per cent of the total, nearly 60 per cent of these patients were alive and well and free of disease after five years. On the other hand, only 22 per cent of stage III cases survived the five-year period, and only 6 per cent of the stage IV, the patients in the most advanced group, lived five years.

It is obvious therefore, that with our present methods of treatment, great improvement in end results will be obtained only when the diagnosis is made at an early stage of the disease. Some im-

*Delivered before the Piedmont Postgraduate Clinical Assembly, Anderson, S. C., September 10th, 1941.

provement will occur when our patients report for examination at the time when they first have symptoms of discharge or bleeding. Our end results will *markedly* improve if we are able to establish a diagnosis before symptoms are evident. To do this, we must have our patients report for careful pelvic examination at least twice each year after their 40th year. Bimanual examination, speculum examination, and biopsy of all suspicious lesions of the cervix should be done. As a *prophylactic* measure, cure of all inflammatory lesions of the cervix is indicated. In 96 per cent of all cases of cervix cancer a clear history may be obtained of one or more full-term gestations, or of at least one miscarriage. Thus the factor of cervical trauma and infection is present in nearly all of them. We believe that the use of the office cautery on the post-partum cervix, where erosion or infection exists, will prevent the development of some cervix cancers in later life. This simple and effective measure is indicated at any time when the cervix is cystic, eroded, or everted.

Cancer of the body of the uterus is far less frequently encountered than is carcinoma of the cervix, and it afflicts older women. The average age at which this disease is found is 54-55 years. It is quite rare under 40. Thus, carcinoma of the corpus is most frequently associated with the menopausal and post-menopausal years of life. The commonest symptom is uterine bleeding. This was present in some form in 97 per cent of 200 cases recently reviewed at Memorial Hospital. In the classical case uterine bleeding manifests itself months or years after completion of the menopause. In other cases bleeding may take the form of menorrhagia or metrorrhagia during the active menstrual life of the patient.

The diagnosis is to be *strongly suspected* whenever post-menopausal bleeding is the complaint, and no lesion of the vagina or cervix is encountered. It is to be considered as a *possibility* in all cases of irregular uterine bleeding at or near the menopause. While the disease remains confined to the uterine cavity, the diagnosis can be confirmed only by diagnostic curettage. This procedure is imperative therefore in all cases of post-menopausal vaginal bleeding where the cause is not perfectly obvious. Curettage should not be long delayed in any case of menorrhagia or metrorrhagia occurring in a woman approaching middle life that does not quickly respond to conservative therapeutic measures.

It is not always possible to make a correct diagnosis from the gross appearance of the specimen obtained by curettage. Positive diagnosis, therefore, must be made by microscopic study. Whereas most cervix cancers are of squamous-cell origin,

most corporeal cancers are glandular in origin, arising from the glands of the endometrium. Just as the histology of cervix cancer varies, so too does that of corpus cancer. Three main classifications or grades are recognized, varying from papillary adenoma malignum, which is relatively low in the scale of malignant structure, to highly malignant anaplastic adeno-carcinoma. It has been long recognized that corpus cancer as a rule tends to remain localized to the uterus for longer periods of time before metastasizing than does cervix cancer, and it is not uncommon to find the disease still confined to the uterine cavity when symptoms have been present for months and even years. There are two factors that have been found to be of prognostic importance. First, when the uterus is not enlarged the prognosis is good; and the prognosis becomes progressively worse with each degree of uterine enlargement. Secondly, when pain is complained of the prognosis is usually poor.

Treatment of corpus carcinoma has usually consisted of complete hysterectomy by either the vaginal or the abdominal route. While the results of such surgical procedures have been vastly superior to the results of surgical treatment of carcinoma of the cervix, careful statistics of many excellent clinics reveal that the five-year results were not as good as had been hoped for. In an effort to improve these results, radiation has been given an important place in treatment at Memorial Hospital for several years. This consists of a combination of external x-ray therapy, and intrauterine irradiation with radium applied at the time of diagnostic curettage, or as soon thereafter as possible if doubt exists, concerning the diagnosis. Six to eight weeks after completion of radiation complete abdominal hysterectomy is carried out in every operable case in which no serious complication exists. When, however, the patient is a poor operative risk, because of advanced age, cardiac and renal disease, diabetes etc., reliance has been placed on radiation alone, and with very gratifying results. Nearly 40 per cent of all those treated by radiation therapy alone were cured of disease, while the end-results were about 15 per cent better in those cases in which hysterectomy followed radiation therapy. Because of the late period in life in which this disease usually occurs, diseases other than cancer account for many of the deaths, and this is particularly true in that group treated by radiation only.

SUMMARY

1. Carcinoma of the cervix is the commonest form of cancer of the female genital tract. The most important factor in prognosis is the establishment of an early diagnosis. Care of the cervix postpartum and inflammatory lesions of the cervix

are stressed as important in preventing the occurrence of cervix cancer.

2. Cancer of the corpus uteri forms an important group in diseases of women in the menopausal years or beyond. The necessity for diagnostic curettage is stressed in all cases of post-menopausal bleeding, and its importance is emphasized in cases of irregular uterine bleeding in the menopausal period. The use of radiation therapy, followed by hysterectomy in favorable risks, is advocated. Radiation therapy alone has given good results in cases in which major surgery is contraindicated.

—121 East 60th Street

FEVER—From p. 598

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HYPERTENSION AND RENAL DISEASE

(C. L. Deming, New Haven, in *Jl. Mo. State Med. Assn.*, Oct.)

Renal arterial occlusion, renal trauma, pyelonephritis and urinary obstruction are factors of significance in relation to hypertension. The arterial circulation of each kidney must be considered individually.

Obstruction to arteriorenal circulation and obstruction to the ureter are of equal significance as to development of hypertension.

Patients with a proven unilateral renal lesion with hypertension may expect relief of hypertension by a nephrectomy when the good kidney has a compensatory function.

FELLOWSHIPS IN NUTRITION

Effective November 1st, Swift & Company made available a number of fellowships to universities and medical schools, for research in nutrition.

To be eligible for grants, projects should be aimed at one of the following objectives:

1. The development of fundamental information on the nutritive properties of foods.
2. The application of this fundamental information to the improvement of the American diet and health.

Swift & Company is naturally interested in nutrition research on meat and meat products, but grants will not be limited to work in these fields. Any worthwhile study on the nutritive properties of foods or the improvement of diets will be eligible for a grant.

Each fellowship will be operative for one year, unless renewed, and will be granted in an amount to be determined by the scope of the project. Placement of the Fellowships in Nutrition will be coordinated by Dr. R. C. Newton and his staff of the Research Laboratories of Swift & Company, Union Stock Yards, Chicago.

WHEN I meet a long Latin word, in a line of quiet English, elbowing its neighbors right and left, like a motor omnibus raging down a country lane, I stop it and ask to see its root. That is the way to take the conceit out of all such words.—Stephen Paget.

CASE REPORTS

X-RAY SHADOWS SIMULATING STONES

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IT is generally known that calcified lymph nodes, some pigmented moles, phleboliths, some cutaneous papillomata and intestinal contents cast shadows on x-ray films which are difficult to differentiate from urinary-tract calculi. Two cases will be now reported in which cutaneous fibromata caused shadows simulating renal calculi.

CASE I.—This patient was a 26-year-old white woman who had been in excellent health until five days before admission when she began having severe pain in the right costovertebral angle which radiated around the abdomen to the bladder. Nausea and vomiting accompanied the pain, but no fever, chills, or bloody urine. The acute pain subsided in a few hours leaving a residual soreness in the right back and flank.

The general physical examination was negative except for the abdomen where there was marked tenderness to fist percussion in the right costovertebral angle and tenderness to bimanual pressure in the right flank. Urine drawn by catheter was blood-tinged and contained many red blood cells. The flat-plate picture of the abdomen showed a rounded shadow two cm. in diameter in the region of the right kidney pelvis (Fig. 1). Intravenous urography showed good kidney function on both



Fig. 1

sides. The right kidney pelvis was slightly dilated and in one plate the shadow previously seen on the flat plate could be seen through the opaque medium.

During the first few days in the hospital the patient had several typical attacks of kidney colic and continued to pass urine containing red blood cells.

At operation the right kidney and pelvis were exposed. The stone could not be felt, so an incision was made in the rather large extrarenal pelvis and its interior was examined with the finger. No stone was found. A catheter was then passed down the ureter for 25 cm. where it met an impassable obstruction. The wound was closed with drainage. While closing the wound a small rounded, soft, wrinkled, pedunculated cutaneous fibroma was noticed near the upper end of the incision. It was removed, x-rayed, and found to cast a shadow identical with the shadow seen in the right kidney region.

Nine days after operation the incision stopped draining urine and two days later the patient passed a very small calculus half the size of a match head.

This patient had a very small calculus in the lower end of the ureter which did not show on the x-ray films and a cutaneous pedunculated fibroma which did cast a shadow which was mistaken for a renal calculus.

CASE II.—This patient, a 49-year-old white man who had previously been in good health, had had some soreness in the left side of his back for seven days. The pain was not severe and was not typical of renal colic. He brought an x-ray picture of the abdomen made elsewhere which showed a small rounded shadow in the region of the right kidney and which had the appearance of a renal calculus.

On physical examination there was no definite tenderness in either costovertebral angle and neither kidney was palpable. The urine was grossly clear and negative. There was a small rounded, soft, pedunculated fibroma of the skin in the right costovertebral angle.

After strapping a needle on the patient's back so its point was against the fibroma, another picture was made which showed the needle pointing to the rounded shadow in the kidney region (Fig. II.)

When this patient was told that he did not have a stone and would not have to have an operation, he was so elated that his pain, which had been lessening, disappeared entirely. He was discharged and has had no further trouble.

These cases illustrate the fact that one should be careful in differentiating shadows seen along the urinary tract. Shadows outside the urinary tract



Fig. 2

can be ruled out by means of cystoscopy, retrograde and intravenous urography, lateral and oblique films. It is well to remember the patient's back and abdomen for moles and pedunculated fibromata before making the diagnosis of calculus.

—Thompson-Daniel Clinic
Professional Building

ECONOMICAL LIVER THERAPY

An interesting report (*Am. J. M. Sc.*, 202:408, September 1941) of a comparison between the therapeutic effectiveness of an extremely concentrated liver extract ("Reticulogen") (Parenteral Liver Extract with Vitamin B₁, Lilly) and less concentrated preparations shows a considerable saving to the physician and hospital using the former. Forty cases of pernicious anemia were treated, thirty-five for periods of from two to four years, and control cases were followed over the same period. Red blood-cell and hemoglobin levels were satisfactorily maintained, neural symptoms were controlled or actually improved, and the patients were able to combat successfully many types of acute and chronic disease almost as effectively as the average population. There was no evidence that this medication was lacking in any protective factor since nearly all of the patients received as much benefit as could be expected from any extract.

VENESECTION IN THE TREATMENT OF ERYTHREMIA

(A. A. Holbrook, Milwaukee, in *Wisc. Med. J.*, Oct.)

The withdrawal of 400 c. c. of blood may be expected to give prompt relief of headache, nervousness, palpitation and unpleasant heat sensations and to reduce red cells, hemoglobin and viscosity, at least temporarily. If a normal red cell and hemoglobin content are artificially produced in a patient with erythremia he may suffer from relative anemia.

Studies before and after venesection indicate that the quantity of blood drawn is quickly replaced.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE HUMAN BEING AT HIGH ALTITUDES

ATMOSPHERIC, or air, pressure, which is fifteen pounds to the square-inch at sea level, becomes less and less as we ascend through this blanket of air, 100, possibly 200, miles thick. The lessening of pressure (weight) as we reach greater heights causes a thinning, or rarefaction of the air, a lessening of the density of the life-supporting oxygen, so that even the deepest of inspirations repeated at the ordinary rate will not supply sufficient oxygen, and it becomes necessary, as the altitude increases, to breathe more rapidly and more deeply, and that the heart pump the blood through the lungs more rapidly, in order to keep the economy supplied with oxygen. Above a certain point a human being cannot exist without an extra supply of oxygen. Aviation experiments have established almost the exact limit of altitude at which human beings can survive without breathing from a tube or chamber of oxygen.

The presence of carbon dioxide in the blood stimulates breathing, and with an increase in carbon dioxide concentration in the blood the stimulus to breathing becomes more and powerful up to a certain point.

Breathing pure oxygen through a well-fitting mask, gives a sense of exhilaration especially at high altitudes, and the necessity for oxygen under artificial pressure becomes more and more urgent. After pure oxygen has been breathed for a while carbon dioxide is eliminated from the blood and from the lungs, and the human mechanism lacking this natural stimulant to respiration, the individual will often stop breathing. In other words, the respiratory mechanism will stop simply from lack of excitation by this end-product of respiration, which until comparatively recently was regarded as waste matter to be got rid of as rapidly and completely as possible.

Ordinary nitrogen is present in the blood. While this is inert and harmless in ordinary conditions, yet in high altitudinal atmosphere the nitrogen will expand and produce bubbles and bring on a condition known as caisson disease or "the bends".

It has long been known that caisson workers, under such conditions as obtain in building underground tunnels, working under rivers where it is necessary to work under high atmospheric pressure in order to keep back the water and mud, must have the high atmospheric pressure of the caisson gradually reduced so that the body can slowly adjust itself to the normal pressure, and so the

painful, possibly fatal, caisson disease be prevented.

In the new airplanes for flying at high altitudes, superchargers are provided to feed the motors a plentiful supply of oxygen and the cabins for the pilots are constructed airtight so that oxygen can be pumped into the cabins with the optimum percentage of carbon dioxide to maintain for the crew as nearly as possible the atmospheric conditions near sea-level.

In preparing for a high-altitude flight, pilots usually take exercise, using the gas mask. This allows them to breathe oxygen and carbon dioxide but leaves out the nitrogen. After thirty minutes of this breathing with exercise, the nitrogen may be well eliminated from the body and at high altitudes the pilots are thus protected, to a great extent, against the sudden expansion of nitrogen and the formation of bubbles in the blood.

Air combat of the future requires planes that can fly at extremely high altitudes and that crews be conditioned by special training so that they can function normally under these unusual atmospheric conditions.

Aviation medicine is making rapid strides and has made possible the high-altitude flying which is doing so much, and promises so much more, in the saving of the world from enslavement by Hitler's Germany.

PRESACRAL NEURECTOMY FOR THE RELIEF OF DYSMENORRHEA

THE majority of patients who have a severe idiopathic dysmenorrhea and have a presacral neurectomy get complete relief from the painful periods; a considerable number continue to have pain of lesser degree; a very few complain as before. An odd thing it is that after a presacral neurectomy patients will often have pain during one or two of the periods but after this it usually ceases.

Viewing a goodly number of these patients over periods of five to twenty years has convinced us that presacral neurectomy will afford great relief in the vast majority of cases of idiopathic dysmenorrhea. Those who have not obtained complete relief state that the residual pain is negligible.

In the few instances in which presacral neurectomy has not given relief from pain, and the dysmenorrhea seems to be about as severe as ever, it is probable that the pain impulses travel by unusual nerve routes, or possibly some of the presacral nerves were missed at the operation directed to their severance.

Whenever patients complain of dysmenorrhea every means should be exerted to determine the cause and if no cause is found a presacral neurec-

tomy should be advised, if the patient is in a satisfactory condition for operation.

There are no after-effects that are disagreeable or harmful. It seems that some cases of chronic constipation are improved and some relieved by this operation, where the constipation is due to atony of the lower bowel.

As to the danger of operation, when properly performed, we consider it nil.

THE DIAGNOSIS OF INTUSSUSCEPTION

INTUSSUSCEPTION occurs most often in the very young and, while in an occasional case relief may come about spontaneously, such occurrences are very rare and unless the intussusception is relieved the patient cannot recover.

Owing to the fact that many cases occur in infants who are so young that they can demonstrate their symptoms only by screaming and writhing, the diagnosis is not always easy; however, early diagnosis is necessary and a very careful examination should be made in any instance of a baby or small child showing evidences of intermittent pain in the belly, the doctor should bear intussusception in mind.

The commonest symptom is this pain which, in young children, is evidenced by crying and often little children will scream if the pain is particularly severe. The attacks of pain come on suddenly and end suddenly at varying intervals. Nausea and vomiting are common. Very often the child will pass mucus and feces and, after the intussusception is well under way, there may be flakes of blood and sometimes a discharge of blood and mucus. This also is one of the most common signs of intussusception.

A bimanual examination with one finger in the rectum and the other hand over the abdomen will often enable one to palpate a mass in the lower abdomen.

Some time ago I saw a patient in which the intussusceptum could be palpated by a finger in the rectum as it had gone down to the point where it could be easily felt. In this patient the intussusception had lasted for some time.

Sometimes it is difficult to palpate the mass. We have had a number of patients in whom the symptoms are characteristic but in which no mass could be felt and on opening the abdomen we have found an intussusception. Once such a patient's symptoms were fairly clear and we thought a mass could be palpated in the right lower abdomen; however, after the patient was anesthetized and the abdomen opened there was no intussusception and an examination of the ileocecal valve indicated what apparently had been an intussusception which had been relieved spontaneously. The appearance of

the intestine indicated there had actually been an intussusception which was probably relieved at the time the anesthetic was being given.

The only reliable relief for intussusception is a surgical operation and this should be done immediately. In a condition of this kind delay may be fatal to the patient and increase the difficulty in reducing the intussusception.

THE INCIDENCE OF UNDULANT FEVER

THERE is far more undulant fever than anyone has heretofore suspected. Many patients have undulant fever in mild form and as the "specific" tests are of doubtful value in many instances, difficulty is often found in arriving at a diagnosis.

That undulant fever is the cause of much general illness cannot be questioned. Many patients who complain a great deal of various aches, joint and muscle pains, and various neuritic symptoms, have as a possible cause of this trouble an undiagnosed case of undulant fever.

The most satisfactory treatment of undulant fever in patients who are able to stand it is hyperpyrexia. In an experience of enough cases and over long enough time to remove the chance of coincidence explaining the sequence of events we have found this treatment highly satisfactory, often the condition clearing up after one or two treatments.

Naturally, it is essential that fever therapy be given by someone who is experienced in its intricate technique. The treatment of undulant fever should always be given by those who are familiar with the disease and know how to treat it.

The vaccine treatment of undulant fever has proved its merit in a great number of patients. Sometimes this is used as a follow-up to fever therapy, or it may be used before fever therapy.

Transfusions of blood from immune individuals give excellent results. In case immune individuals are not available, it is possible to immunize persons against this disease and when the blood has reached the highest titer blood transfusions may be given. One of the most important things about treatment is to continue it until the patient is well—at least until the patient is clinically well.

Every doctor should be on the alert for undulant fever.

THE TREATMENT OF ACUTE PHLEBITIS BY PARAVERTEBRAL INJECTIONS OF PROCAINE SOLUTION

WE HAVE FOUND that immediate relief from acute pain from phlebitis results from paravertebral injections of procaine solution. After many years of exhibition of this method of treatment we are frequently almost startled at the dramatic way in

which immediate relief of pain is afforded and the attack cut short.

Usually the injections are made along the lower lateral aspects of the four lower lumbar vertebrae. Immediately after injection it is noted that the affected leg becomes very warm and almost pink, as compared to the opposite leg which shows little or no change. The cutting short of the attack of so painful and potentially dangerous a condition, followed by rapid general improvement, and great reduction in the chance of recurrence is gratifying to patient and doctor alike.

The injections are fairly easy to give but, of course, must be given with great care, but we have never noticed any unfavorable results.

THE ALIMENTARY TRACT ranks close to the anterior lobe of the hypophysis in regard to the number of active principles it is supposed to elaborate. The existence of three gastrointestinal hormones is well established by physiological evidence adequately confirmed. These are secretin, cholecystokinin, and enterogastrone. The diagnostic or therapeutic usefulness of these three autocoids has not been established.—A. C. Ivey.

NOT ALL CONFESSION is of sins; and a man may confess his faith, his ignorance, or his love. Use the word as we will, it means no more than this, that he goes outside of himself for answer, assurance, audience. I only want to confess what I have learned, so far as I have come, from my life, so far as it has gone.—Stephen Paget.

WHEN CARBON DIOXIDE enters the blood it immediately passes for the great part into the red blood cell where carbonic acid is formed. It was almost inconceivable that a purely chemical reaction, such as this could occur so rapidly without assistance of an enzyme. The discovery of carbonic anhydrase makes possible such a reaction.—Gurney.

THERE IS NO AGREEMENT where cardiac pain actually originates. The pain of angina pectoris has been attributed to irritation of afferent nerve fibers in the wall of the coronary arteries on the basis of spasms or diseases of the coronary arteries or the first portion of the aorta, to arterial congestion in the coronary arteries as evidenced by the effect of adrenalin, to anoxia of the myocardium with resulting accumulation of unknown metabolic substances, and to coronary insufficiency on an organic or functional basis.—Lachmann.

IF A DOCTOR'S LIFE may not be a divine vocation, then no life is a vocation, and nothing is divine.—Stephen Paget.

The annual meeting of the ASSOCIATION OF SURGEONS OF THE CHESAPEAKE AND OHIO RAILWAY was held at White Sulphur Springs, West Virginia, on October 24th-25th under the presidency of Dr. Clarence Porter Jones of Newport News. The new officers of the Association are: President, Dr. T. W. Moore, Huntington, West Virginia; Vice President, Dr. M. L. Rea, Charlottesville, Virginia; Secretary, Mr. G. E. Meanley was re-elected. The meeting-place of the Association for next year has not been selected.

DEPARTMENTS

INSURANCE MEDICINE

For this issue ENNON S. WILLIAMS, M.D., Richmond, Va.
Medical Director The Life Insurance Company of Virginia

INSURANCE HISTORY-TAKING

INSURANCE medical histories differ from clinical histories in the following ways:

1. They are of legal importance.
2. There is no chief complaint.
3. They must be written for interpretation by a third party.
4. Greater effort is required to obtain details from an applicant for insurance than from a patient.

LEGAL IMPORTANCE

The medical insurance history assumes legal significance by being photographed and attached to the policy contract. The insurance company accepts the risk with the understanding that the information listed is accurate and complete. If there be misstatement of material importance the contract is contestible for a variable period of time. It is the duty of the history-taker to see that the questions are asked in a simple and unhurried fashion, in order that the applicant may have ample opportunity to give intelligent and honest answers. The history blank is so arranged as to meet certain legal requirements and the most effective results are obtained if its questions are read exactly as written, and the applicant's answers fully transcribed. Any course short of this may prove embarrassing to both examiner and applicant should court proceedings ensue because of material omissions in the history.

NO CHIEF COMPLAINT

A clinical history is built around a chief complaint. This is used as a focal point about which are developed corollary factors that guide the attending physician in arriving at a working diagnosis. The insurance history, since it never includes a chief complaint, is developed around past medical attention. The names of attending physicians and the dates of all illnesses are ascertained and recorded. Sometimes an accurate statement of the diagnoses can be obtained; at others the symptoms suffered are elicited and are further clarified by inquiries concerning duration, hospital care, special diagnostic and laboratory procedures and consultations with specialists. The efficient examiner is constantly on the lookout for symptoms of chronic disease-states, especially those commonly associated with the chief cause of death.

EXPLANATORY DETAILS NECESSARY

Although the responsibility for accepting or rejecting an insurance risk lies with the Home Office of the Company, the examiner is expected to do more than merely list the applicant's replies to the questions. The companies do want the applicant's exact answers, but this is not all. Since the medical examination report must be interpreted by the home office medical department, it is necessary that the examiner obtain and include in his report explanatory details. This requires both a broad knowledge of clinical medicine and a certain interest in detective technique.

Occasionally there appears in a report a history of medical treatment for indefinite conditions such as "pain in side," "abdominal pain," "indigestion," "nervousness" or "kidney trouble," without apparent effort to explain. This causes inconvenience for many persons. The insurance company must file the papers as incomplete and correspond further with the examiner. The examiner is inconvenienced because of the necessity of interviewing the applicant the second time, and the applicant does not appreciate the additional bother.

The importance of developing a complete history may be illustrated by a review made recently of insurance applicants who gave a history of medical treatment for nervousness. Further investigation of these applicants revealed quite a diversity of causes for the nervousness. Some of the causes were important in relation to insurability, while others were considered as merely temporary states and were disregarded.

Of 130 applicants who gave, primarily, a history of treatment for nervousness, 29 were found by further investigation to have histories considered important enough to indicate rejection for insurance. These included 4 cases of pellagra, 4 of heart disease, 9 of arterial hypertension, 2 of insanity, 2 of spells of unconsciousness, 1 of feeble-mindedness, 1 of severe birth injury; and cases of paralysis agitans, diabetes, tuberculosis, toxic goiter; and in one case the nervousness turned out to be occasioned by the applicant giving birth to an illegitimate child.

Twenty applicants were found to have conditions justifying postponement. These included histories of recent "nervous breakdowns," "rundown condition," menopausal disturbances, pregnancy, nervous indigestion, proposed operation, etc.

Among the remainder considered insurable were such conditions as the menopause (8 cases), death in family (5 cases), overwork (12 cases), dysmenorrhea (3 cases), auto accident, childbirth, amenorrhea, anal fissure, chorea with recovery, hives, domestic difficulties, change in work, financial difficulties, and moving from the country to the city.

If the investigation had been stopped without attempting to determine the cause of the nervousness this whole group of cases should probably have been rejected, as there were a sufficient number of seriously impaired persons to give an unfavorable mortality experience for the group. An exact history permits more accurate classification of risks, thereby providing insurance benefits for a larger percentage of the population, and salvage of business for the company.

The variability in significance of other general terms might be listed. Indigestion, headaches, backaches, kidney trouble, dizziness and female trouble are among the more common. Even a history of a routine physical examination requires explanation. When it is clearly determined that this examination was for employment, school, marriage, or insurance, the history is obviously of no medical importance; but there are a certain few who undergo these examinations owing to symptoms of probable importance. Tactful and skillful questioning on the part of the examiner is required to disclose these.

APPLICANT VS PATIENT

A patient desires to give a full history to his attending physician in order that he may derive benefit from his treatment. An applicant, on the other hand, wants his insurance and is not unduly disposed to talk about his illness. Experience has shown, however, that the great majority wish to give straightforward, honest answers to the medical questions asked. Ofttimes they do not know which facts are important. It is therefore necessary that the medical examiner skillfully interrogate in order that a maximum of information may be obtained in a minimum length of time. No set of questions will be adequate for all cases, but the questions should bring to light medical ministrations to the applicant. It will then be the duty of the examiner to take these leads and determine accurately the seriousness and the duration of the illnesses. In some instances a direct statement from the attending physician will be necessary for accurate evaluation of a given illness. A good examiner, by intelligent questioning, should make the necessity of correspondence with attending physicians infrequent.

DERMATOLOGY

For this issue PAUL G. REQUE, M.D., Durham, N. C.

THE MANAGEMENT OF URTICARIA

URTICARIA, hives, nettle-rash, or mad itch, is a condition frequently seen by all physicians. The diagnosis is usually very easy with the evanescent occurrence of raised, itching and burning wheals, first white, later becoming erythematous. Urticaria

usually occurs on the lower limbs and trunk, occasionally on the arms. It is of two varieties, the acute and the chronic, the acute being far more common. In the acute variety, the lesions tend to disappear in a matter of minutes or hours, whereas in the chronic variety they have been known to persist for months and years.

The immediate management of the case is of chief concern to the patient and is, therefore, a primary object in treatment. However, the prevention of recurrences is probably more important to patient and physician, and the difficulties involved in finding the cause are many. Although it would seem that intracutaneous testing should be of extreme value in this type of allergic manifestation, the opposite is true. The patch test has little value and very little reliability can be placed upon scratch or intracutaneous testing, inasmuch as the patient's skin is usually very reactive and shows dermatographism, or the definitely positive tests are so numerous that no single item can be selected. Commonly there is no history of familial allergy. In many instances of acute urticaria the patient knows of some unusual food or recent drug ingestion which may be quickly selected as the possible cause for the urticaria, and the avoidance of the offending substance prevents further attack. However, most of the cases require exhaustive physical examinations to rule out foci of infection such as the tonsils, the naso-sinuses, and the genito-urinary tract. Emotional stress and strain are also factors which must not be overlooked. Endocrine disorders such as hyperthyroidism and menstrual abnormalities must be carefully evaluated. Urticaria requires that a careful history of drug ingestion be obtained. The most commonly used drugs causing urticaria are salicylates, iodides and bromides (particularly iodized salt and bromoselzer), the barbiturates, morphine derivatives, resins, phenolphthalein and laxatives, ipecac, derivatives of quinine, and the arsphenamines. There are other drugs which produce urticaria but this list includes the common offenders. Elimination of foci of infection requires dental examination, gastro-intestinal studies, and stool examination for parasites; the last-named are very common excitants. Neoplasms, blood discrasias, neurological and metabolic diseases, also bird and animal itch mites, brucellosis, all should be borne in mind as the possible explanation. In addition to this, foods are carefully investigated and a diary may be necessary in order to incriminate or exonerate certain uncommonly eaten foods. Inhaled substances such as dust and external contact with wool, silk and dyed materials are again exciting factors.

The management of the acute disease is a simple one. A saline purge with the use of mineral oil

before each meal, and the administration of an absorbing substance such as kaolin after meals will afford relief in many cases of urticaria which apparently are of gastrointestinal origin. In addition, the use of drugs affecting the vegetative nervous system, such as atropine, adrenalin and ephedrine, will prove effective in quickly terminating the acute attack. Autohemotherapy consisting of 10 c.c. of whole blood from the patient's vein immediately injected into the buttock may prove of great help. In the chronic cases, elimination diets may be employed, beginning with abstinence from wheat, eggs and milk, each for a period of two weeks. Drugs of all kinds should be forbidden, other than those here specifically directed to be used. Calcium in the form of calcium gluconate intravenously and by mouth is frequently soothing. In addition to saline laxatives, bile salts may stimulate the flow of bile sufficiently to help eliminate any possible toxic product in the gallbladder. When intestinal parasites are found, or foci of infection discovered, they must be removed before repeated attacks can be controlled.

Local treatment includes calamine lotion with 1 per cent phenol and $\frac{1}{2}$ per cent menthol added as a cooling and antipruritic measure, and starch baths and oatmeal baths given twice daily are quite relaxing. Other antipruritics such as 2 per cent aluminum acetate in 70 per cent alcohol may prove of great benefit. It must not be forgotten that a systemic disease, syphilis for instance, may be the causative factor, especially in the long-standing case.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

THE INCIDENCE OF GLAUCOMA IN THE UNITED STATES

AVAILABLE statistical data tend to show that glaucoma simplex or compensated glaucoma is increasing. This is the insidious type, practically always bilateral, and one eye is usually more involved than its fellow. There is rarely any external evidence by which its presence may be detected on ordinary macroscopic examination. More often than otherwise the patient is not aware of its presence until he notices a limitation of his field of vision and with it a progressive lessening of sight. The disease is then in an advanced stage. To the careless examiner and to the uninitiated the condition is too often undetected, and if detected in its incipency, which is the period in its existence when treatment is effective, requires a consciousness of glaucoma and careful analysis.

This is in contradistinction to non-compensated or uncompensated glaucoma which is the acute or

chronic congestive type. In this there are immediate objective and subjective symptoms sufficient to proclaim its presence because it is always unilateral, the globe highly injected, pain severe and vision rapidly and markedly deficient. It can be and frequently is confused with acute iritis from which it must be quickly differentiated before treatment of any kind is instituted. Prompt and correct diagnosis with early medical and surgical treatment result in spectacular recovery.

Unfortunately glaucoma simplex is not so amenable to treatment even in its incipency, and still less so if it has not been detected until the patient becomes aware of a visual problem. Hope then of controlling its progress or even of saving what vision is left enlists the full coöperation of the patient and all of the ingenuity and skill of the physician in charge. So difficult, so time-consuming is the treatment, so unfavorable the results of treatment in advanced glaucoma simplex that there is a trite saying among oculists "refer these patients to your enemies".

The problem of glaucoma simplex has become a national one because it is now recognized as one of the major causes of blindness. Data at hand show it to be the cause of 18 to 20 per cent of blindness in the United States, and from these available data it is estimated that from 1 to 3 per cent of the population have the disease to some degree. These data have been amassed from many private sources, from glaucoma clinics recently organized in several large cities, more specifically from The Glaucoma Clinic initiated and organized 3 or 4 years ago by Dr. H. S. Gradle and his co-workers at The Illinois Eye and Ear Infirmary. This clinic has a full-time oculist, nurse and clerical worker who with the other oculists on the hospital staff and the Social Service workers of the city handle all the clinic glaucoma cases in the vicinity of Chicago. Through this organization a roster is kept of all known glaucoma cases, both clinic and private, in that area. From this nucleus and from other County Medical Societies throughout the State of Illinois oculists routinely appear before various County Medical Societies to read papers on this subject before general meetings. The purpose is to create an awareness of glaucoma among the whole profession.

At the recent meeting of the American Academy of Ophthalmology in Chicago the early diagnosis, treatment and follow-up of glaucoma simplex cases were preëminent in the papers before the meeting, in the special courses given to its members, in the pathological exhibits and in private conversations among those present. It was brought out in these discussions that the great majority of glaucoma simplex cases were detected where the patient pre-

sented himself to a medical refractionist for examination of his eyes. It was also emphasized, as has long been known, that not more than 15 per cent of the people who wish to have their eyes examined for the fitting of glasses applied to the medical refractionist for that purpose. The other 85 per cent were examined by the itinerant glass-fitter, the over-the-counter salesman and the non-medical refractionist. It is obvious from these sources that no reliable data on the incidence of glaucoma are to be had. It is therefore evident that the incidence of 1 to 3 per cent in the general population in this country is merely an approximation. It is probably much higher.

The writer feels that a problem which involves so great a local and national economic loss from partial and total blindness among its people should be given the same state-wide recognition and consideration as any other crippling disease. Its detection, treatment and control should be initiated, fostered and carried out by oculists. The problem is before us and prompt and energetic action is needed.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

HOSPITAL SHRINKAGE

IT IS BAD enough to be cheated out of hospital collections, but it is still worse to lose what you have already collected. Hospital shrinkage is responsible for most of the loss after it is once collected. This is divided, for the most part, into waste and neglect on the part of the visiting staff and the employees, and in goods and supplies stolen.

The average hospital staff-member does not discipline himself in economy when he is working in the hospital, therefore, it is necessary to remind him repeatedly that goods and supplies cost the hospital just as goods and supplies cost him in his office. The failure to recognize this fact is responsible for an enormous amount of waste in gauze, antiseptics, disinfectants, catgut etc. The carelessness and indifference on the part of the physician in handling the surgical instruments costs the hospital many dollars every year. Very often he will use the wrong instrument to pick up gauze, clamp towels to the skin, or attempt to use a small forceps where a large one is indicated. It is the writer's opinion that the waste by the staff could be largely prevented, if by a kind but persistent persuasion, they could be taught to be more thoughtful in this respect. Each business administrator or superintendent might work out his own special plan for accomplishing this much desired end.

The hospital staff, for the most part, is the product of hospital training schools and should have been taught economy; but many of the largest hospitals have neglected this training. This is particularly distressing because of the persistence of The Nurses Standardization Committee's attitude that the large hospitals are the only ones capable of training the nurses. Be that as it may, the majority of the nursing staff in the hospital is not as economical as we should like them to be. They are wasteful and extravagant to an alarming extent in many cases. A small part of this is due to the impatience of the visiting staff who want to appear so busy that they can not wait a minute for the proper instrument or for sufficient preparation to protect the bed linen or to obtain the proper dosage of a certain drug. The habit of leaving the ice-box open, leaving the faucet on, or letting the light burn is a common sin of which most hospital employees are guilty. There are some nurses and some maids who are naturally clumsy; but then, there are others who are just careless and who break up equipment and instruments far in excess of the unavoidable because of their indifferent attitude. These types of employees are seldom reformed without the help of a salary deduction at the end of the month for excess breakage; but, for the average person, it is probably wiser to proceed along the lines of frequent staff conferences at which economy is stressed. The average employee is a decent person, and if sins of omission and commission are brought to his/her attention frequently each will make improvement.

When it comes to shrinkage due to goods, supplies, and food being stolen, here we have a tremendous problem, made by short-termed employees who have left their former employments for the reason that their fingers were "sticky" or that they forgot to return what they borrowed. Some staff doctors are responsible for instruments being missing and this is a difficult situation to deal with. The doctor intends to return the instrument or to pay for the supplies he got in the middle of the night or on a holiday. The fact remains, however, that the hospital loses much each year through this leakage. One of the best methods to prevent it is to have a hard-and-fast rule that no person shall remove anything from the hospital without signing in a book for it. Once each month, if not more often, this book should be gone over by the superintendent or business manager to see if the goods have been paid for or if the instruments have been returned.

When it comes to the problem of wilful taking, it is not sufficient to discharge the employee and let him go at that. There is a common custom among judges to let a prisoner go free if he or she

will get out of town within the next twenty-four hours. This is the extreme of folly. It is obvious that others come to take their places who have received similar sentences from judges in nearby towns. Discharging hospital employees for stealing often leads to their going to another hospital and repeating the dishonest dealings; and often that hospital will, in turn, follow the customary method of discharging, and so on ad infinitum. The only legitimate excuse for people taking something that belongs to another is when they are hungry and incapable of getting sufficient to feed themselves. This could not be the case of a hospital employee who receives two or three good meals from the hospital every day and after that, if one is caught wilfully stealing, it would be much easier for the hospital world if they were summarily prosecuted according to law. Nothing short of this is fair, either to the hospital or to the guilty employee, because leniency shown him, in many cases, will only lead to the opinion that crime does pay.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

PHYSICAL THERAPY COMPARED WITH OTHER MEASURES IN ARTHRITIS

It must be remembered that there are several important and prevalent types of arthritis and the treatment for the different kinds varies considerably, whether it be medicinal or physical. This is the keynote of an article by one of the world's good doctors¹ with a vast experience of arthritis.

This experience has shown physical therapy to deserve rating as one of the most important measures in arthritis. Much of it consists of the application of heat in its various forms. The most important heat effects are active hyperemia, mobilization of immune bodies in the infectious forms of arthritis, and sedation. Massage and active and passive exercises can also be used. The latter play an essential part in the treatment of spondylitis and the infectious forms of chronic arthritis. Postural exercises have given gratifying results in the treatment of rheumatoid arthritis.

Ultraviolet rays are valued for their tonic features; infrared afford a hyperemic influence. Warm baths are helpful in all forms of arthritis. The bath serves three purposes for the convalescent patient: it strengthens muscles, eliminates stiffness and acts as a general sedative and appetizer. Short-wave diathermy has been disappointing in the treatment of rheumatoid arthritis, although it is useful for hypertrophic arthritis and bursitis.

1. Russell L. Cecil, in *Archives of Physical Therapy*, October.

Although this doctor treats a great many patients with arthritis, he has never had any physical therapy equipment in his office, he having always felt that in all fairness it should be used by a specialist.

LIP CANCER

ANY crack, "fever blister" or unexplained sore, especially if on the lower lip of a man, which does not heal very soon—within four weeks according to Hunt¹—must be considered cancer until proved otherwise by biopsy or darkfield examination. Cancer and syphilis can coexist.

The incidence of cancer of the lip can be reduced by protection against sunburn, avoidance of burns by short cigarettes and hot pipes; relief from irritation by sharp, jagged or overhanging teeth; and eradication of leukoplakia and papillomas.

The primary lesion of cancer of the lip can be destroyed by radiotherapy or surgery. Radiotherapy is generally preferred by this writer, because of its simplicity, better cosmetic results and less interference with function. Resection and plastic repair are advised for the ulcerating, destructive cancer and the rare radioresistant lesion.

Systematic follow-up is an essential part of proper care.

Metastasis occurs first to the submaxillary and submental lymph nodes and submaxillary salivary glands, with later extension to the cervical nodes, the mandible and adjacent structures.

The treatment of metastasis is an individual problem. The indicated management depends primarily on the stage and secondarily on the grade of the cancer as detailed in the paper.

The prospects of a five-year cure are 90 to 95 per cent without apparent metastases, 33 1/3 per cent with an early single focus of metastasis in the suprahyoid structures, and only 1 per cent after metastases are present in the cervical lymph nodes. The importance of early correct diagnosis and adequate treatment are obvious. We can all be on the lookout, and *think* of cancer when we see a sore or lump anywhere, any time, that does not heal promptly.

TUBERCULOSIS

J. DONNELLY, M. D., *Editor*, Charlotte, N. C.

COR PULMONALE AS A CONTRIBUTORY CAUSE OF DEATH IN TUBERCULOSIS

ALTHOUGH pulmonary tuberculosis is given as the cause of death in the greater majority of the deaths of individuals who have been afflicted with the disease, the actual cause of death in very many

cases is not the pulmonary disease, but the effects of this disease on other vital organs of the body. This fact has, in the past few years, elicited as much interest and discussion as has the pulmonary disease itself. It has often been said that a patient does not die of the disease tuberculosis, but of a complicating factor, tuberculous or otherwise, in some other part of the body.

In a recent issue of the *Bulletin of the American Academy of Tuberculosis Physicians* is an article by Mahon and Grow offering a discussion of these contributory causes of death, illustrated by case histories and autopsy reports. In 100 consecutive autopsies in Fitzsimons General Hospital, the following are listed as the principal causes of death: chronic cor pulmonale, 29; chronic hematogenous dissemination, 17; gastrointestinal tuberculosis, 11; tuberculous and mixed infection empyema, 9; hemorrhage from a pulmonary tuberculous cavity, 8; medical factors unrelated to tuberculosis (such as carcinoma, adenocarcinoma, cardiac lesions, pneumoconiosis etc.), 8; rapidly progressive pulmonary dissemination, 5; and collapse therapy of tuberculosis, 4. It is notable that deaths caused by chronic cor pulmonale were considerably more numerous than those in any other category. The fact that only two spontaneous pneumothoraces are noted in the table is commented on by the authors, who state that a great many such accidents occurred in this series of cases, but in only two cases was this complication the immediate cause of death.

Since in 29 per cent of their series of cases death was by right heart failure, the authors felt that cor pulmonale requires some emphasis. Members of the profession have become familiar with the fact that cardiac failure occurs frequently as a terminal event in older patients who have suffered from a fibrotic pulmonary condition for several years. Physicians familiar with asbestosis, the pulmonary fibrotic condition caused by the inhalation of asbestos dust over a considerable period of time, know that the terminal results in many cases of this disease is progressive cardiac failure. Such an end-result also occurs in silicosis, but not as frequently as in asbestosis. Furthermore, acute cardiac failure occurs not infrequently in certain individuals known to have suffered from a chronic fibroid tuberculosis for a number of years.

The authors note several reports, dating from 1792 to the present time, indicating that the effect of chronic tuberculosis on the right heart has been recognized for many years. More recent studies on this subject explain the right heart strain as caused by increased pulmonary resistance in the lesser circulation due to narrowing of the arterial and capillary vessels resulting in hypertrophy and

1. Howard B. Hunt, in a recent issue of the *Nebraska State Medical Journal*.

eventual dilatation of the right ventricle. The authors give the following as the factors which cause pulmonary hypertension in tuberculosis: (1) caseation and cavity formation; (2) proliferation and extensive fibrosis; (3) atelectasis; (4) mediastinal distortion; (5) pulmonary collapse by induced or spontaneous pneumothorax; (6) immobility of one or both halves of the diaphragm; (7) postoperative deformity of the chest; (8) severe cough; (9) pleuritis, obliterative and with effusion; and (10) emphysema.

It is stated that the effect of extensive tuberculosis on the right heart is similar to the effects of hypertension in the greater circulation upon the left heart. The right heart, too, has a considerable reserve factor which allows it to compensate for considerable interference with the pulmonary circulation, and, hence, hypertrophy of the right ventricle does not always indicate failure. In some of these cases showing right-heart failure there was slight if any hypertrophy. The clinical signs of an overloaded right heart are given as cyanosis, dyspnea, orthopnea and edema, and it is stated that they appear late in the disease, often as terminal symptoms; and the prognosis is poor for more than one or two years of life. However, many patients with an old fibrotic lung condition, even with the development of extensive pulmonary emphysema, live for years, although handicapped by more or less of dyspnea.

The great difference in the incidence of right-heart failure in this series of cases from reports from other institutions is noted as probably due to the fact that many of these patients were veterans of the first World War who are now in the 40-55-year group. The patients dying of right heart failure had had their tuberculosis an average of 8.8 years, whereas the control group without right heart hypertrophy had symptoms of tuberculosis an average of 2.4 years before death. The type of tuberculosis which runs a slowly progressive course is more likely to cause pulmonary hypertension and right ventricular hypertrophy. Also, right ventricular failure is due to depletion of the cardiac reserve, and is more likely to occur in older patients.

The 75 cases in this series showing right ventricular hypertrophy were classified as follows: (1) exudative, (2) fibrocaseous, and (3) caseous pneumonic. Seven cases, or 9.7 per cent, were classed as exudate, and none of them showed right-heart failure at death. Sixty-two (83.7%) were far advanced fibrocavernous tuberculosis, and five cases, in all of which death was by right-heart failure, showed arrested fibrosed lesions. Forty-eight cases (66%), showed marked atelectasis and fibrosis with hypertrophy of the right heart, and

mediastinal shift with atelectasis was present in 34 cases. Pleurisy with effusion, serous and purulent, was present in 18 cases. Six cases showed none of these complications.

Sudden changes in the pulmonary circulation may result in right-heart failure. In this series of cases seven deaths from heart failure were precipitated by massive bronchogenic spread of the disease; in four the cause was a pulmonary thrombus; in one a large hemorrhage; in the seventh spontaneous pneumothorax.

In this article particular attention is given to the role played by the gradual development of cor pulmonale in many cases and the resulting right-heart failure. That this condition is of importance, particularly in the chronic fibrotic or fibrocaseous cases in the older age limits, is manifest. Also, it is possible that the condition may assume a greater degree of importance, since there are many patients who have obtained an arrest of their active disease by means of extended periods of pneumothorax treatment, a procedure which has a tendency to overload the right heart. Death from right-heart failure is particularly frequent in cases designated as tuberculo-asepsis, in which all semblance of tubercle formation has been replaced by fibrous tissue. It is worthy of note, also, that hypertrophy of the right heart can not always be demonstrated by the x-ray film, hypertrophy of the right-heart muscle having been found at autopsy in cases in which previous to death the x-ray film showed apparently normal cardiac contour.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

LESSONS TO BE LEARNED FROM REPORTING OUR MISTAKES

EVERY doctor who sets up to diagnose disease and treat patients would do well to review his mistakes at least once a year, and to pass on the information gained so that he and others may make less and less mistakes as time goes on. It is easier for a pathologist to report such cases, since in few of them does a doctor in that specialty share in the responsibility for the mistakes. Once in a long while a clinician takes his courage in both hands and makes one of these valuable contributions to medical progress. A Mid-Western professor of medicine¹ makes a factual presentation of material from 500 consecutive case histories of patients entering a University Hospital during the previous year, with maternity cases only excluded from the consecutive series. Not included are technical yet avoidable operative errors since "little value would

1. F. J. Bean, Omaha, in *N. C. Med. J.*, Oct.

accrue to such a recital except to the individual who experiences such unhappy circumstances."

"Lest the title of our paper seem to belittle the profession, we have the temerity to suggest a similar study be made sometime of the laudable accomplishments found in an equal series of cases."

Of the 500 cases reviewed, 410 showed a very close correlation between the diagnoses offered by the referring physician and the findings as reported back to him after adequate hospital stay and treatment. Four hundred and ten were discharged as improved; 38 were unimproved; 20 were not treated, either because no therapy was felt to be of any avail or because no condition could be found requiring treatment, while 31 died in the hospital.

Dismissing 410 cases as handled apparently satisfactorily from the standpoint of diagnosis and assuming that treatment accorded them was reasonably adequate and free from gross error, we are left with 90 cases to analyze more carefully. These may be grouped into 9 divisions according to the nature of the mistake made.

Group 1—Cases in which the referring physician seems not to have recognized or has been unable to cope with a family or personal adjustment problem, financial or otherwise, and manifested by physical complaints. These are the functional or psychic problems which go unrecognized, and are treated for a wide variety of complaints until some particularly observing physician takes the trouble to talk freely to the patient or family and, having gained their confidence, stumbles upon some fact which turns out to be the key to the situation. One must be extremely careful not to label as functional some organic illness but the error seems to be more often the converse of this. There are 18 cases in this group. A few typical examples:

A man of 29 was referred as presenting a duodenal-ulcer problem. No organic trouble was found but the patient confessed a fear of being drafted, which was primarily the cause for his gastric complaints.

A woman of 31 was referred to us twice, once as having gallbladder disease, again as having persistent ulcer. Maladjustment with her husband and family was discovered—all her complaints having originated shortly following her marriage.

A 21-year-old girl referred with vague history of sinus complaints. Complete studies including x-ray and metabolic readings, etc. elicited nothing organically wrong. The case was finally labeled anxiety hysteria on the basis of her being a neglected daughter, not too attractive, who was endeavoring to get some attention from the rest of the family.

A woman of 25 referred to us for a diagnosis of vague abdominal distress, belching and sleepless-

ness. The only pathologic finding was a small cervical erosion. She had four children, had been greatly over-worked; and under the strain of financial reverses she had broken down. A few weeks of proper diet and psychotherapy has put her on her feet without any thought or gastric difficulties.

A man of 32 referred as having an acute cholecystitis with history of attacks coming on when he bent over to work. We were unable to find anything wrong other than that a definite neurotic individual had found that he could live on his relatives without hard labor.

Group II—Cases in which adequate examination would readily have disclosed the major difficulty. There are 12 instances of this. No funds were available for laboratory and x-ray study, but does this excuse the physician from doing a prostatic or pelvic examination or making a simple urinalysis? Three instances of the 12 will suffice.

A man of 51 referred as having prostatic hypertrophy, gave a history of hematuria, frequent urination, shutting off of the stream, and loss of weight. His doctor admitted that on examination the prostate felt normal. Examination in the hospital disclosed a carcinoma of the bladder without involvement or enlargement of the prostate.

A man of 30 referred with hemorrhoids, gave a history of persistent rectal bleeding. Examination in the hospital disclosed an easily palpable, nodular mass in the rectum. Biopsy showed this to be a carcinoma. Resection was done and the patient left much improved.

A man sent in with a diagnosis of blood dyscrasia. Examination, particularly ophthalmoscopic, disclosed a loss of central vision and a rather typical picture of pituitary adenoma.

Group III—A group of 11 in which dietary factors are overlooked or uncorrected and largely responsible for the hospitalization.

A woman of 40 referred as having chronic appendicitis with diabetes after a single urine specimen had been run and showed sugar. She had been placed on a very rigid diet and alarmed about her diabetic state. Examination in the hospital showed no glycosuria, no hyperglycemia. There was no evidence of a chronic appendicitis. She was very constipated and had been so for some time. Relief of this condition and allaying of the fear of diabetes resulted in recovery.

A man of 40-odd referred to us as a colitis patient, had been on a diet inadequate in vitamins and other food essentials. Studies disclosed a moderate gallbladder involvement, but when put on a fairly free diet with very little restriction, recovery was quite remarkable.

Group IV—A group of eight in which gallbladder and ulcer symptoms are confused. It would appear possible in the majority of instances to establish a diagnosis by adequate history, physical examination, and if necessary gastric or stool analyses. Many a physician in Nebraska does not attempt to carry out these simple laboratory procedures, although many others are doing so.

A man of 64 referred to the hospital as a case of perforated ulcer, was found to have a definite disturbance of gallbladder function but no stone. There was no evidence of ulcer or perforation. He was not operated upon and under medical management made a good recovery. The history was clearly indicative of gallbladder involvement rather than ulcer.

A man of 27 sent in with a diagnosis of gastric ulcer, was found to have a chronically thickened and adherent gallbladder which was removed. There seemed little suggestion of ulcer either in the history, gastric analysis, stool examinations, or x-ray studies.

Group V, only four cases which demonstrate the mistake of depending upon radiological evidence when not supported by clinical findings.

One was referred to the hospital as having a lung abscess, x-ray pictures taken by the home physician showing this. In the hospital an empyema was detected and after drainage a fistula developed, x-rays showing nothing further in the lungs. The patient returned to the hospital after an interval of five months with the fistula still draining. Further exploration detected cancer with metastasis not suspected before.

A woman of 40 years was sent in for diagnosis of some obscure trouble. The home physician had had x-ray studies both of the gallbladder and the gastro-intestinal tract and sent the patient to the hospital with a request for surgical exploration. There had been loss of weight, epigastric pain, and a history quite suggestive of ulcer. Our x-ray studies showed a gastric ulcer on the lesser curvature; and under medical management the patient made rapid improvement. We quote this to demonstrate the inadequacy of a great many x-ray films without desiring to go into or cast any reflection on the ability of the general man to do his own x-ray work.

Group VI, of which there are 5 cases, illustrates the temptation to temporize with a condition which does not yield readily until too late it is discovered that cure is impossible. Aside from the physician's error there are two factors influencing which we should mention; first, the question of availability of hospital facilities for all such patients; and sec-

ondly, the reluctance to be overcome on the part of the family and patient at the thoughts of hospitalization for apparently trivial symptoms.

A case of a squamous-cell carcinoma of the cervix stage III, treated for more than two months by the home physician before attempt was made to send her to the hospital. A diagnosis was made by the intern in the admitting room on the basis of a large fungating, easily visible mass.

A man of 38 years referred with a parotid cyst of four-years duration increasing in size the previous three months. A diagnosis was made in the hospital of adenocarcinoma.

A man of 50 years suffering for five months with malaise, loss of weight and vague abdominal pain—referred to the hospital as possible cancer of the colon. He was shown to have a carcinoma of the kidney and when asked why he did not come to the hospital sooner stated that no suggestion had been made that he needed such attention.

Group VII.—Permitting ourselves to be led astray by current medical thought is something we are all guilty of. Three cases are sent in for a possible herniated intervertebral disc which do not have the syndrome one really would expect. Someone discovers a case and talks about platybasia and within a week we receive requests for the admission of two such cases, neither of which turns out to have such a condition. Thus five cases in this group, to which may be added many instances of the prescribing of certain medications because they are in vogue and may do some good. The use of sulfathiazole enemas and vitamins indiscriminately are good examples. A patient ready for dismissal was given prescriptions to take home for \$7.50 worth of drugs, this amount representing nearly her total financial resources for existence per week. These prescriptions consisted of a liver preparation, hydrochloric acid, sulfanilamide, three separate vitamins and salyrgan.

Group VIII—Three cases in which the thyroid was blamed for symptoms without due cause.

One of these three was a woman of 30, sent in as having a toxic goitre. She had a normal pulse, no visible tremor or goitre and a BMR of —3 repeated several times. She was of nervous disposition, had endocervicitis, but nothing else of significance. The case might perhaps more properly have been called an anxiety depression.

Group IX—A miscellaneous group of 25 in which the following mistakes seem discernible and which time will permit us only to mention.

Non-recognition of a pregnancy beyond the three-months period—often associated with other pelvic conditions.

A tuberculosis case treated as cardiac because of a predominant tachycardia.

Tracheo-bronchial tuberculosis treated in hospital for several weeks in an attempt to explain an eosinophilia. Recognition might well have been made of the tuberculosis from films submitted at the time of admission.

An undetected syphilis called a cholecystitis because of the presence of jaundice. The state provides for a free blood Wassermann.

A case of nephritis called appendicitis, and appendectomy done.

A case of allergy referred for nasal or sinus operation.

A diverticulosis of the esophagus readily remedied by surgery which was allowed to go for five years as a thyro-glossal cyst.

It would appear that in this series mistakes in diagnosis were made in 18 per cent of the cases. Mistakes in therapy are recognized to be more difficult of evaluation and no attempt has been made to arrive at a percentage figure on these. It is admitted that they are common to referring physicians and those who care for the patients in the hospital. Failure of the physician to take into account all the environmental, social and psychological factors appears as the most frequent mistake.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

THE GREAT NUT-CRACKER

IS ONE'S PAST PAST, and does one's future lie ahead of one? Hardly. Yet nine of ten would probably reply, if questioned about their past, that one's past life becomes as detached from one as completely as the tadpole's tail becomes separated finally from the growing polliwog. But the past of the human being never becomes separated from the individual. It becomes absorbed into the individual; lost, perhaps, to the individual's consciousness of its existence, but it becomes the larger part of the individual; and the dominant portion of the mortal in motivating conduct and in stamping life with happiness or with unhappiness. Heredity gives the person characteristic physical form and specific attributes and qualities. From the directing and creating influences of heredity forces there is no escape. In each individual are epitomized the record of the responses, material and immaterial, of the race of which the individual is the final representative.

The immediate moment in the life of each mortal is a mere fiction. What is meant by the present is only that portion of the past that always con-

stitutes a large portion of one's present. No experience in the domain of the immaterial becomes wholly lost. Each act performed leaves within the individual a record of it. Every great emotional, intellectual, and spiritual event in the individual's life exercises some fashioning effect upon the person's character and personality. We are each clay, and the Potter is Heredity, Destiny, Fate—all those things that one does, or does not, become one's master. We tend to become what we have been—and are—and hope and yearn to be. But it is as utterly impossible for one to step ahead or aside from one's past as to outrun or to hide from one's own shadow on a clear day or during a night made luminous by a full moon.

Parents, teachers, physicians, nurses, ministers, officers, and all others who have to do with mankind during the formative years should realize that each child and each adult is unceasingly engaged in creating the kind of person that the individual is to become. Yesterday and the days that preceded yesterday are the the most influential factors in a mortal's life. Out of the deeds of those days come the deeds of the individual's days that are to be. It is well to live well not only for the sake of the comfort of the moment, but much more so for the sake of the years that are to be.

Not a day passes, hardly, in which I do not find my head shaking invisibly in unseen unbelief of the protesting statement of the philandering potator that the life ahead of him will be a model of non-toxic rectitude. If he has become hopelessly entangled in the network of self-destructive behaviour indulged in by him for many years then he has become the victim of his own past, and his future will be an extension of that past. The reaping of the harvest comes after the sowing and because of the sowing. If one has interest in one's future one will make use of each day as a preparation for each tomorrow.

And, as one emerges from childhood, one senses that each tomorrow and all the tomorrows that one thinks of constitute a portion of one's today. In hope, in yearning, in fear, in dread, in purpose, in striving, each of us who is living today is living also tomorrow. How much of sleeplessness and of uneasiness and of suspense, dread and anxiety have their origin in one's attitude toward those tomorrows? If one could look back upon one's life without reproach of self, and into the future without fear of one's failure, how much more tolerable each today would be for each of us! But betwixt yesterday and tomorrow we are each impinged upon and relentlessly pressed upon as a nut is held by the jaws of the cracker, one on either side. And sometimes the nut is cracked; and not infrequently a mortal is broken, too, cracked, fragmen-

tized, disintegrated. The jaws of the cracker come sometimes upon the mortal with such force that the individual's resistance is insufficient. The individual's estimation of his yesterdays and of his tomorrows may be too much for him. He may disintegrate and fall apart.

The ideal life would be without regret of the yesterdays and without apprehension about the tomorrows. Has such a life ever been lived? By whom?

I think I know that the egotist, in his constant intumescence of himself, is only trying, and perhaps without realizing what he is about, to develop a delusion about himself sufficiently pleasant to himself to enable him to continue to live with himself, instead of plunging into Biscayne Bay or swallowing a package of Rough on Rats. Most egotists, in the audienceless examination room, stripped of sartorial investment and reduced to somatic nakedness, are brought likewise to emotional, mental and spiritual nudity. In such circumstances, the most pachydermatous megaloccephalic usually confesses himself to be, even in his own opinion, only a Lilliputian. I often think of proclaiming haberdashery and of sparkling jewels as an expensive, pathetic and futile effort at substitution for what is lacking within the personal calvarium. One may fail in the vital struggle because one is one's self. But failure is inescapable if one attempts to be another.

Mental hygiene suggests that wholesome living, like honesty, is the better policy. I have respect for the potency of the characterful individual, but I respect also the influence of the individual's past, in fashioning the individual's future. A fatalistic sort of biological predeterminism is silently but busily and powerfully and constantly engaged in each of us in fabricating the architecture of our future behavior. In that sense each mortal is self-made. One's attitude towards one's past may be modified, either at a religious revival or in silent communion with one's self. But the individual's past has become a part of history, and it can neither be obliterated nor modified. It is irrevocably fixed. Yet the surgeon, the internist, the teacher, the court, the minister, and often, of course, the psychiatrist is each expected to reform a life that the individual has spent his life in malforming. There is probably more medical than poetic truth in the oriental quatrain:

The Moving Finger writes; and, having writ,
Moves on: nor all your Piety nor Wit
Shall lure it back to cancel half a Line,
Nor all your Tears wash out a Word of it.

The majestic and solemn lines do not constitute a pessimistic wall. They state a truth, prevalent undoubtedly throughout the universal domain. Re-

spect for truth and acceptance of it may not always be comforting, but such an attitude always reflects intelligence and courage.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

MINERAL OIL AS A LAXATIVE AFTER LAPAROTOMY

WE THINK it fundamental that the alimentary tract should be kept at rest for at least two days after laparotomy. If there has been intraperitoneal infection, intestinal resection or much operative trauma postoperative feeding should be delayed for a longer time. Except after surgery of the large bowel the first two or three bowel movements should be induced by enemas. They do not cause intestinal peristalsis and they mechanically empty the lower bowel without causing gas pains.

In most patients after laparotomy obstipation has to be combatted in some way during the period of enforced bed rest. In them, unless there is contraindication, the patient may be given an enema or, if he prefers, his choice of a laxative drug for daily evacuation.

Patients who continue constipated more or less indefinitely during prolonged convalescence and after dismissal from the hospital often become real therapeutic problems. In them, almost as a rule, whether it is first prescribed by the physician or not, mineral oil is given as a routine. In cases that have had diffuse peritonitis from any cause, in those that have had intraperitoneal drainage there are apt to be intestinal adhesions which may cause acute obstruction if peristalsis is too actively stimulated by catharsis. In the aged, because of its blandness, and in cases of diverticulitis of the colon, mineral oil is often given over long periods.

It is important to know that the administration of liquid petrolatum in any form over a prolonged time may not be innocuous. Although considered to be inert, unabsorbable and acting only as an intestinal lubricant, it has objections which, for prolonged use, more than offset these advantages. Thoroughly mixed in the intestine with the digesting food the oil dissolves the fat soluble vitamins and by preventing their absorption deprives the patient of these vital food elements. In this way the patient develops a vitamin deficiency even though taking a well balanced proper diet. Mixed with oil, the passage of the food through the intestine is so rapid that there is not sufficient time for digestion to be completed. Due to the continuous flow of oil through it the sigmoid colon can no longer exercise its function of being a terminal storage place for the completion of absorption be-

fore the discharge of its contents. The sigmoid becomes coated with a layer of dirty oily feces which mechanically impairs absorption. Prolonged administration causes "mineral oil indigestion," a clinical syndrome characterized by avitaminosis, anorexia and loss of weight.

Finally, although the stools are liquid, after the administration of oil elimination is imperfect. The defecation reflex is not adequately stimulated by oily stools and sphincteric control soon becomes impaired so that the patient may not be aware of the trickle of oil that continuously drools from the anus. It is impossible to maintain proper hygiene under such conditions and local skin irritation follows.

REFERENCE

MORGAN: Liquid Petrolatum Purgatives. *J. A. M. A.*, Aug. 18, 1941.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor*, Greenville, N. C.

MILESTONES IN NORTH CAROLINA PUBLIC HEALTH

(Continued from last month)

1886—The *Health Bulletin* made its appearance in April. A pamphlet on Care of Eyes and Ears, by Dr. Richard H. Lewis, was printed and distributed.

1887—Much interest and discussion in the Board membership and throughout the state this year centered about the necessity for providing some safe method of drinking water and sewage disposal.

1888—Yellow-fever epidemic in Florida and refugees to Western North Carolina demonstrated value of a Board of Health to cope with situation. Annual appropriation, \$2,000.

1889—The chief item of interest and importance to the cause of public health was a state-wide Sanitary Convention held in Raleigh February 6th. It was largely attended by physicians and others from many cities and towns who were much concerned about the problems of a pure water supply and sewage disposal. The Board published an exhaustive paper by Dr. H. T. Bahnson, of Salem, President of the Board, entitled: The Public Water Supply of Towns and Cities in North Carolina.

Providing refuge for hundreds of people who had fled from their homes farther south on account of yellow fever was a grave problem.

1890—A widespread epidemic of influenza, or la grippe, spread over the state in January. The epidemic appeared first in Russia about

Nov. 1st, 1889. By Dec. 15th, 1889, 200,000 cases were reported in New York alone. It struck North Carolina in the first week in January and in two weeks' time it was reported to be raging in 68 counties.

1891—Influenza continued to be present in all sections of the state throughout the year. The conjoint session met in Asheville on May 27th. Dr. Thomas F. Wood was re-elected Secretary and Treasurer for a term of six years.

1892—Dr. Thomas F. Wood, the Secretary of the Board, died August 22nd. Dr. Richard H. Lewis elected Secretary to succeed Dr. Wood, September 7th; annual appropriation, \$2,000.

1893—Legislative provisions: (1) Laws improving the reporting of contagious diseases, (2) the protection of school children from epidemics, (3) protecting the purity of public water supplies, and (4) regulation of common carriers. Legislature provided that Governor appoint five of the nine members of the Board of Health, that the State Medical Society elect four, and that the term of office of the members of the State Board of Health be six years. Pamphlet on quarantine and disinfection was prepared and reprinted by many of the state papers. Annual appropriation, \$2,000.

1894—A number of public health conferences were arranged and held in different towns of the state. *Bulletin* was increased from a mailing list of 800 to 1,200. Annual appropriation, \$2,000.

1895—Dr. Albert Anderson and Dr. W. T. Pate were elected bacteriologists for the Board. Annual appropriation, \$2,000.

(To be continued)

These data abstracted from the Twenty-eighth Biennial Report Entitled "The Chronological Development of Public Health Work in North Carolina."

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

ENTERO- } GASTRONE, PRESENT CONCEPTIONS: THE MEULENGRACHT vs. THE SIPPY

THE issue for October of the *American Journal of Digestive Diseases* carries a series of articles dealing with those similar or identical hormones—one from intestinal extracts, the other from urine; winding up with an article comparing the results of the time-honored Sippy method of treating peptic ulcer, with the newer Meulengracht method.

From the first of these articles¹ we learn about the steps in the development of our present conceptions:

Ewald and Boas, in 1886—observed that olive oil added to starch paste inhibited gastric secretion and delayed evacuation. Quigley, et al, in 1934, apparently demonstrated the action of a specific hormone—enterogastrone. Lim, et al, found enterogastrone in intestinal extracts and in blood of animals fed fats. Parenteral injection of enterogastrone was shown to be effective

We may emphasize that enterogastrone, through its marked influence on gastric motility and secretion normally suppresses the rate of gastric secretion and evacuation. Thus it minimizes trauma to the pyloric sphincter region and retards peptic-ulcer development. There is a possibility that enterogastrone and urogastrone may prove to be identical or to arise from a common source.

The second² gives the status praesens:

Normal urine contains a substance which inhibits gastric secretion and motility. Enterogastrone is extracted from the mucosa of the small intestine. Since it has not been established that the two factors are identical, the name urogastrone was given to the substance obtained from urine.

Preparations are now available which are capable of inhibiting the gastric secretory response of the dog to histamine in doses of less than one milligram. An effective dose is obtained from approximately 600 c.c. of urine. Purification has not yet progressed to the stage of crystallization or chemical identification.

When sufficiently pure, and when available in sufficient quantities, it is hoped that urogastrone will provide an effective and serviceable method for completely controlling gastric acidity, without restriction or modification of the diet, and without the continual administration of alkaline or neutralizing agents. Whether a method capable of such results will prove to be therapeutically effective, it will be the province of the clinician to decide.

The next in order³ states the facts as to the effect of urine extract on peptic ulcer:

The many factors that must be considered in evaluating results of therapy in peptic ulcer scarcely need repetition: the natural life-cycle of the disease with its many remissions and recurrences; the psychic effect upon physician and patient alike of new therapeutic procedures; psychologic and environmental problems; associated and intercurrent diseases.

Röntgenological evidence of healing, in patients with duodenal ulcer, does not parallel clinical progress. The only basis on which comparisons can be made are symptoms. These are notoriously capable of misinterpretation by physician and patient alike.

The 63 patients consisted of 48 clinic patients and 15 private patients, 41 of whom were Jewish and 22 were non-Jewish; 10 were negroes. Forty-seven were men and 16 women ranging in age from 14 to 63 years.

All patients had röntgenologically proved ulcers: 58 duodenal ulcers; 3 gastrojejunal ulcers and 2 gastric ulcers. The average duration of ulcer symptoms prior to onset of treatment was 11 years. All patients had been previously treated ambulatorily either at the clinic or by competent physicians, each, for several ulcer recurrences. Sixteen of the patients had 22 hospital-bed-rest managements. Ten additional patients were confined to a hospital at one time or another, for a total of 13 hemorrhages. One patient was operated on for closure of a perforation and 3 were subjected to gastroenterostomy.

There were two groups of patients: an unselected group and a group of patients who had failed to respond to the usual diet-alkali-antispasmodic management. All were permitted to continue whatever dietary or medical management had previously been elected by them or prescribed by their physicians. Urine extracts were administered subcutaneously or intramuscularly, daily or on alternate days during the first week in doses of $\frac{1}{2}$ to 2 mg., twice weekly for the ensuing 2 or 3 weeks and once weekly thereafter. Length of treatment ranged from one month to many months, averaging two months. No medication was prescribed other than what they had been taking before this treatment was instituted and mineral oil. All patients were treated ambulatorily. If treatment was discontinued and symptoms recurred, injections were reinstituted, whenever possible. The 63 patients were thus treated for a total of 83 ulcer attacks.

	Total % Improved (Attacks)
Diet:alkali series	72
Urine-extract series	89

While the percentage of relapses within six months and one year is approximately the same as obtained in a similar series treated with diet and alkalis, the patients treated with urine extract enjoyed a more liberal diet. It is probable that a combination of diet, alkalis and urine extract therapy might produce even more encouraging results. Whether larger doses of a more highly concentrated extract will produce still better results is a

1. Enterogastrone—Development of Present Conceptions, J. P. Quigley, Cleveland.

2. Present Status of Urogastrone, J. S. Gray, Chicago.

3. The Effect of Urine Extract on Peptic Ulcer, D. J. Sandweiss et al., Detroit.

matter for further clinical trial. Aside from local reactions at the site of injection after each of the first two or three injections, no untoward or detrimental effects have followed urine-extract therapy.

Then we have⁴ the informative comparison:

The Sippy was the official treatment of the Peter Bent Brigham Hospital for fifteen years until January 1st, 1940, at which time it was decided to try the Meulengracht treatment.

Our former regimen started patients on hourly doses of four grams of calcium carbonate or two grams of magnesium oxide throughout the 24 hours for 2-3 days and then transferred them to the regular Sippy regimen. If a hypersecretion or continuous secretion was suspected, powders were continued throughout the night for another 2-3 days after food was started. In the milder cases, the milk feedings might be started from the very beginning. During the 15 years in which this regimen was in force we treated approximately 450 ulcer patients with hematemesis or melena, with a mortality of the usual six per cent.

The Sippy method of treatment neutralizes the gastric contents if properly carried out. Although neutralization was the reason which led Sippy to institute this treatment, it also introduces something continuously into the stomach and gives food somewhat sooner than the starvation method of treatment. Therefore, this method is more like the Meulengracht treatment than M. himself was using before he started feeding his patients. One might well consider then whether other things being equal, one should expect much greater improvement by the M. treatment over the S. as is found over the starvation treatment.

4. A Comparison of the Results of the Meulengracht and the Sippy Therapies in the Care of Bleeding Peptic Ulcers. E. S. Emery, Jr., Boston.

THE MANAGEMENT OF SOME MINOR SURGICAL LESIONS OF THE FINGERS AND TOES

AN ARTICLE¹ just come to hand sensibly takes account of this problem and helps toward its solution.

A thorough understanding of the common lesions of the digits is of great importance to all of us in the active practice of medicine. We can do much in preventing the development of major lesions, reducing the disability of the patient and facilitating early return to full work.

Furuncles and carbuncles are usually due to the staphylococcus aureus, and painful from tension in tissues which are not distensible. Rest on a splint and the application of moist wet boric acid dressings have stood the test of time until there is localization of the lesion. If the core is not discharged a small incision in the center may facilitate drainage and hasten recovery. The carbuncle

requires more extensive incisions. Carbuncles and recurrent furunculosis demand investigation of carbohydrate metabolism.

Chronic staphylococcus infections must be differentiated from chancre, sporotrichosis and blastomycosis. A dark-field examination excludes the first and study of a drop of the wound secretions mixed with 4 per cent KOH rules out the other two conditions. Examination of the exudate from the base of the ulcer shows staphylococci. These ulcers respond promptly to daily cleansing with alcohol followed by the application of 10 per cent ammoniated mercury ointment.

Eponychia, covered by cuticle only, requires use of a sharp scalpel, without anesthesia. The application of moist boric dressings for 24 hours usually results in complete relief.

Paronychia ("run-arounds") represent more extensive infections of the tissue at the base of the finger nail. Novocain, 5 per cent, without adrenalin, is injected along each side of the digit. The distal portion of the nail is left intact to be displaced by the new nail. The drain is removed in 48 hours allowing the flap to fall back in place over the matrix, moist boric acid dressings continued for three or four days.

Splinters embedded deep under the nail are best approached by cutting a deep V in the nail, grasping the end of the splinter with a mosquito or splinter forceps. If the finger has been traumatized by unsuccessful efforts to remove the foreign body anesthetize by local nerve block before removal.

In case of a felon the doctor is never justified in waiting for fluctuation. Ethyl chloride locally should never be used for anesthesia in these lesions. Use either digital block, or pentothal sodium by vein. Using a tourniquet, the distal pulp space is opened by a lateral incision which may extend halfway around the finger tip or completely circumvent the distal phalanx to form a U incision. The knife must sever all the fibers in the distal pulp space and permit adequate drainage of the loculi. Rubber dam is placed in the wound for 48 hours. Continuous boric acid packs are used for three or four days after which a dry dressing is adequate. Infection present for several days before advice is sought may mean osteomyelitis with ultimate necrosis of the diaphysis. The sequestrum will separate and be extruded.

The commentator would depend on sulfanilamide by mouth, thorough incision and irrigations of the wound with .8 per cent sulfanilamide to give earlier and just as happy response.

Puncture wounds of doctors' finger tips contaminated by septic material require that the operator immediately remove his gloves and cleanse the wound under running water. Free bleeding is to

1. C. W. McLaughlin, Jr., Omaha, in Neb. Med. J., Oct.

be encouraged and if the wound is a deep one it should be well cauterized with a sharp-pointed stick dipped in pure phenol. If this accident occurs in the course of a surgical procedure, fresh sterile gloves may then be put on and the operation completed. Should infection develop it is to be treated by complete rest, voluminous continuous moist boric packs and sulfanilamide. Surgical incision is to be avoided unless there is localization with the formation of pus.

Ingrown toe nails require a properly fitting shoe. In mild cases daily packing of the sulcus between the nail edge and the adjacent tissue with cotton soaked in half alcohol and half iodine may prevent more serious infection. The nails should always be cut transversely in a straight line and the nail edges permitted to grow out to points. The majority of cases, with deeply buried nail edges and infection.—Under digital nerve block anesthesia a segment of the lateral edge of the nail 2 to 3 mms. wide is removed with the underlying matrix. If both sides of the nail are involved, a bilateral procedure is carried out and the wounds loosely packed with vaseline-gauze packing. This is removed in 24 hours after thoroughly soaking the toes in warm saline solution. Shoes can usually be worn with comfort in three to four days..

Trimming of corns with a razor blade is to be condemned. Soak feet in warm soap suds for 20 minutes the first night of treatment.

Apply a. m. and p. m. for three days:

Salicylic acid	2.6
Flex and nonflex collodion aa.....	8.

Again soak feet for 20 minutes in warm soap suds and water.

Careful trimming of excessive callus with a sharp scalpel, removing if possible the firm central portion, repeat two or three times if necessary to effect complete relief.

Soft corns are best treated by well fitting shoes, soaking feet each night in warm soda bicarbonate solution, and gently scraping away the excessive epithelial tissue at intervals, wearing between toes small pledget of cotton sprinkled with boric acid powder or bismuth subnitrate. Excision may be required.

Plantar callus and plantar warts are usually seen on the heel or the ball of the foot occasionally on the base of the great toe, may appear as a localized area of callus. The treatment of these lesions is best entrusted to a competent radiologist. About six weeks is required for the callus to soften and disappear but the ultimate results are superior to surgical excision.

A compress of a sulfonamide solution may be substituted for boric acid solution, in most instances to advantage.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

LUDWIG'S ANGINA

WHEN we are confronted with Ludwig's angina we need to know what to do right away. An article¹ here abstracted is much to the point.

Streptococci, predominantly hemolytic, are the causative organisms in most cases, occurring alone, often with the staphylococcus or occasionally with the pneumococcus. The portal of entry of infection may be a lesion anywhere about the lower lip, tongue, floor of the mouth, gums and teeth of the lower jaw, tonsils or pharynx. Infections incurred about the lower molars, particularly following extractions, are the most common source. A massive swelling, often bilateral, always brawny and tender but rarely fluctuant, involves the suprahyoid region, being extreme in the submaxillary area. The overlying skin is conspicuously free of inflammation, showing only edema. The tongue is swollen and pushed upward. The patient experiences pain and difficulty on attempting to open his mouth. Deglutition and speech are trying and often impossible.

The aims of treatment are to establish an airway, to relieve tension, to provide drainage, and to combat the infection through supplementary measures. The wound should be left open and packed with iodoform gauze which is left in place from 12 to 24 hours. The most dependable means of providing an adequate airway is to perform tracheotomy. For anesthesia, the intravenous anesthetic agents evipal soluble and pentothal sodium offer great advantages. As an adjunct to surgery, sulfanilamide is of great value in hemolytic streptococcus cases; that is to say, in most cases.

1. Ashbel C. Williams, in *S., G. & O.*, Feb.

NAILING A MALICIOUS FALSEHOOD

Someone is spreading rumors among our customers that this company is owned or controlled by Sterling Products, Inc., of Wheeling, West Virginia, who have been cited by our government for Nazi affiliations.

This company has not, and never has had, any connections whatsoever with that concern and it is merely our misfortune that the names are similar.

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THE PLACE OF THE HOSPITAL IN THE CARE OF PATIENTS

HOSPITAL, hospitable, hostelry, hospice, hotel—all have a common derivation from *hospes*, a guest. The primary idea is one of affording shelter, anciently shelter and food to those in need at no cost.

Fifty years ago it was a common thing for mortality rates, medical and surgical, to be published in two lists—"In Hospital," "In Home"—and invariably the rate in hospital was very much the higher. Until long after the War Between the States hospitals for persons other than the indigent were great rarities, especially so in this section of the country; and many of us can remember when most of the knowledge of hospital conditions was derived from memories of conditions in the military hospitals of 1861-1865, and how difficult it was to get many in need of hospital care to accept it.

In recent years it has come about that it is difficult to keep people out of hospitals. Folks in general seem to believe that calling a structure a hospital endows it with magical powers for restoring health, that there is no other way by which the sick can be saved. What more natural than that hospitals would begin to feel that theirs is first place in the care of the diseased and injured, and to act on that feeling?

By odd coincidence about two years ago there appeared in one column of the Charlotte News a statement that if anyone should need a bed in a Charlotte hospital that night, he or she would have to do without, as every bed was full; while another column carried a picture of a boy sitting up in a bed in a hospital, and under the picture a statement that the boy was taken to the hospital from his home in the city because, in going into a dark basement he felt something stick in him and *thought* he had been bitten by a snake. One can but wonder what could have been done for the boy in a hospital that could not have been done just as well and safely at home, even had it been *known* that a snake had bitten him. It could be safely wagered that at least 20 per cent of the beds in our hospitals that very night, when there was no room, were occupied by persons who would have been just as well off in health and a good deal better in pocket if they had been in their own beds at home.

In a recent issue of one of our high-class lay monthlies¹ a former member of the faculty of the University of London Medical School² writes to insist that in the rendering of medical and surgical care the patient comes first, the doctor second, the nurse third, the hospital fourth; that hospitals are

1. The Atlantic Monthly for August.

2. Miles Atkinson, M.D., New York.

provided for the sick and their doctors, not the sick and the doctors for the hospitals; that without doctor and patient there would be no need for the hospital, which, at a pinch, both can still do without.

The hospital administrative staff, we are told, in their anxiety to find the means of supporting the building and their desire to make it function efficiently, are apt to assume for themselves an authority to which they are not entitled.

Certain troubles in this regard seem to be quite general:

A whole train of fallacies has arisen—that the bigger the building, the finer the hospital; the larger the staff, the better the work; the longer the rules, the greater the efficiency; and that all energies should be devoted to the task of keeping the machine running. The administration rules the roost. The patient, instead of being the first consideration, tends to take second place, with doctors and nurses as also-rans. It is apt to be forgotten, in the exigencies of finance, that the reputation of a hospital depends upon the calibre of its staff, not upon the luxury of its housing.

Two major causes have produced this sad state of affairs. The increasing scope of modern medicine has led to the demand for more equipment and for more expensive equipment, while an appreciation of the evils of overcrowding in wards has necessitated an increased allowance of bed space per patient. The cost per patient has therefore increased by leaps and bounds. An institution which has been planned without regard to expense finds it difficult to reorganize on a less pretentious scale. Large and elaborate buildings are solid obstacles.

Big hospitals have many and grave disadvantages. The argument for them is that they are more economical and more efficient. They are certainly impressive, but their economy and efficiency are more doubtful.

To one accustomed to the hospitals of Europe, these palaces are breath-taking. He gazes in awe at the spacious halls, the numberless elevators, the lavish equipment, the profusion of secretaries, helpers, orderlies, which combine to give an impression of wealth beyond his wildest dreams. Coming on expensive drinking fountains at frequent intervals he is disappointed to find that they gush forth only cool clear water, not some rare Tyrrhenian wine, for the effect is Old Roman in its grandeur. All this is very well when you can afford it, though even so it savours of ostentation. Nowadays this lavishness often hides an empty purse and a continual struggle.

The idea that the aggregation of many institutions in one building, the substitution of a single management and administration for many, would effect economies which would more than offset the extravagance of setting has proved to be a delusion. Efficiency suffers in these big medical centers. Individual departments get so large that they begin to approach autonomy, to become more and more self-contained. The medical center is no longer a large general hospital, but an agglomeration of small special hospitals aggregated in one place, with all their objectionable features aggravated thereby. The greatest of these is the one that applies to all specialism—the narrow viewpoint. In the general hospital of moderate size, all the staff members know each other; they work together as a family. Patient and doctor alike profit from the coöperation. In the super hospitals the staffs are so big that half of them do not know the other half. In getting from one department to another in these vast buildings requires time and a passion for geography. Not only do the doctors get lost, but so do the patients. We treat, not James Smith, but No. 2677774.

Consider a patient who needs some small procedure which can be called surgical, if you are so minded, for instance, puncture of a nasal antrum to determine the presence or absence of infection, really a diagnostic procedure, but it is often classed as a minor operation and has to be paid for as such. In all probability that patient pays to the hospital a clinic fee, an x-ray fee for an examination which is indefinite in its results, and a minor operation fee to establish a diagnosis.

Or again, the doctor may be particularly interested in some case and would like to have some investigations made, special treatments instituted—things unnecessary to the adequate care of the patient, but perhaps important in the discovery of new facts about disease. This becomes expensive unless regulations can be waived—and regulations are apt to be rigorously followed, for they mean money.

The private patient, too, complains that, for a price well within the range of hospital charges, he can get better accommodation, food, service and general amenities in a first-class hotel than he can in a hospital. His personal tastes are catered to in a hotel, and he is treated as an individual instead of as simply one of a number of necessary evils. Now, granted that the circumstances which lead a person to a hotel are very different from those which lead him to a hospital, yet his essential requirements are much the same. And this suggests that hospitals might be well advised to make more use of men trained in hotel work. Of the few that

do this, patients are loud in their praise, and these hospitals make money.

In the last twenty years or so it has become the practice in some institutions to employ a certain number of full-time salaried physicians whose duties are largely teaching and administrative. Instead of refusing to see private patients, or refusing fees if for some reason they are compelled to, these whole-time physicians often take fees and turn them over to the hospital, which applies the money towards its general expenses. Every consultation fee so taken by a whole-time man maintained by an institution is one less available to outside consultants who are dependent upon private fees in order to live.

Another widespread practice that is generally accepted, though it is difficult to see why, is that of working the pathological laboratories and x-ray departments at a profit which goes into the funds of the institution. The pharmacist too has a justifiable complaint against the hospitals. The wholesale drug houses all have a special hospital rate for drugs that is considerably below the wholesale price the outside pharmacist must pay. The hospital pharmacy is thus enabled to dispense medicines to the poor at a very low rate, which is well and good, but to the better-endowed patients they charge a price sometimes even in excess of what would be paid outside. Thus both wholesalers and retailers are being forced to contribute, willy-nilly, to hospital funds.

In view of facts like these, there is every reason for the feeling, widespread among thoughtful and farseeing members of the profession, that the doctors are not only held responsible for the medical care of patients but forced to contribute to the financial support of the hospitals.

It is to be hoped that there will be no more of these huge structures, costly to build and costly to maintain. The functional life of a hospital building today is estimated at no more than thirty years, and may soon be less than that if the rate of medical progress continues. What good, then, to put up palaces? Rather erect as economically as possible structures that will last efficiently their allotted span and can without compunction be torn down when their usefulness has ended.

Let them be smaller and let there be more of them, scattered at many strategic points rather than congregated at one. Hospitals should be scattered and staffs concentrated, small staffs doing more work in fewer institutions.

Some special hospitals must remain, for special reasons. Patients with acute infectious diseases are not suitable inmates of the ordinary general hospital, even though it is possible, if need arises, to nurse them there without risk to others. Bed isola-

tion, however, is a troublesome business and requires careful training and attention to detail. Tuberculosis will need to remain segregated in county and state sanatoria. Mental diseases require special buildings because of the special difficulties of their care, though probably these should be attached to general hospitals in order that all facilities may be readily available for the investigation of their manifold problems. Radium and radiation therapy must be concentrated in the larger institutions or sometimes in one special hospital which may serve a large area, and this not only because of the high cost of apparatus and the limitations of its applicability, but also because of the special techniques required for its handling and its grave dangers in inexperienced hands.

This observer and commentator concludes that:

The hospitals are in a parlous state and something very soon will have to be done about it. Half-hearted measures are of no use. The time has come for the large view, for the facing of facts, for drastic measures.

That the situation as regards hospitals is as bad as this article pictures it, few will agree. That much of its content is deserving of serious attention, few will deny. It seems manifest that one of the most serious troubles in our modern society is that we are ruled in all our affairs by stupid slogans; and one of the stupidest and most serious of these is, "You get what you pay for." Those of us who saw service in the Kaiser's war learned that patients recovered just as certainly, just as promptly, just as happily, in hospitals built and operated on the Ford plan as in those built and operated on the Lincoln plan. But in civilian hospitals there are no evidences of this fact having been learned.

COMPENSABILITY IN HEART DISEASE CONDITIONS

ABOUT heart diseases and back injuries, as compensable conditions, most doctors feel and confess much uncertainty. Few of us welcome opportunities to testify in such cases. Too frequently we are obliged to say we do not know, not infrequently that we have no opinion, one way or the other, at all satisfactory to ourselves.

In the paragraphs to follow is abstracted an article¹ which may be very helpful in such cases. Lawyers, including those on the bench, have much respect for the printed opinions of professional men of the big cities.

A good many very positive statements are made on subjects which had been very hazy in the editor's mind. May they be of much service to our

1. A. M. Master, New York, in *Bul. N. Y. Acad. of Med.*, Oct.

readers, in their Compensation Law cases and in their ordinary practice.

The interval between an effort or accident and the onset of symptoms is usually short; the latter are delayed in only a few instances.

In spite of the quantity of experimental work performed in the past few years the cause of ordinary high blood pressure or essential hypertension remains obscure. We know that there is a familial tendency and a frequent association with obesity and glandular disturbances. It is a chronic condition which comes on gradually and often without symptoms, and is not compensable. This applies also to enlargement of the heart and hardening of the arteries, both of which result from or accompany high blood pressure. Cardiac enlargement and arteriosclerosis develop over a period of years and can not be related to any particular event or effort. The term chronic myocarditis, which has been applied loosely to this type of heart disease, should be discarded. Instead one should specify chronic disease of the coronary arteries with scarring of fibrosis of the heart muscle. When high blood pressure or hardening of the arteries have developed after a number of years, several complications may occur.

A stroke may be produced in three ways. The commonest is rupture of a small artery in the brain resulting in hemorrhage; secondly, a clot or thrombosis may form locally in a small blood vessel; thirdly, a clot may be dislodged from a diseased heart and an embolus may settle in the brain. All three of these result in damage to brain tissue and may be followed by loss of consciousness and/or paralysis which may be very brief or may persist. Neither dislodgement of a clot from the heart, cerebral hemorrhage or thrombosis is probably related to effort. It is necessary to examine each case carefully for evidence of previous high blood pressure and arteriosclerosis. If these have been present the stroke may be merely coincidental to the effort. Trauma to the head, without fracture of the skull, can produce concussion and contusion of the brain and subdural hemorrhage with neurological signs and symptoms. Although a stroke may seem to be the result of an accident, it may have caused the accident.

In a state of hypertension and arteriosclerosis the heart may be unable to maintain a normal blood circulation. The patient has difficulty in breathing, the lungs may be congested, the liver enlarged and the ankles swollen, sometimes for long periods without the patient's being aware. Heart failure is a natural sequence in the course of heart disease. When there has been long-standing heart disease, or when there is acute involvement of the heart, as in rheumatic fever, coronary

occlusion and many infections, an unusual exertion may strain the heart so as to cause heart failure. The commonest factor of heart failure in chronic heart disease is infection, not effort. Heart failure immediately follows strain, there is sudden congestion of the lungs or edema; it is rare to find congestion of the liver and swelling of the legs.

"Acute dilatation of the heart," if it occurs at all, is merely one sign of sudden heart failure.

Angina pectoris is merely a term applied to pain over the heart region. There are many causes outside the heart of pain in this location—ulcer of the stomach, rheumatism of the spine, neuritis, gall-bladder disease, shingles. In the heart, disease of the valves and of the aorta, as occurs in syphilis may produce heart pain, but the usual cause of angina pectoris is hardening of the arteries and interference with their ability to supply the heart muscle with blood. Persons with coronary artery disease may feel pain beneath the breast bone or sternum when they walk or are emotionally upset, because the narrowed arteries are unable to supply the greater blood flow required by the heart. The pain usually lasts only a short time and is relieved by rest or nitroglycerin. The attack of pain results from a temporary insufficiency of blood flow through the already diseased coronary arteries and not from any new damage in the artery induced by the effort.

The problem is frequently complicated by the fact that the patient denies any symptoms prior to the exertion.

Coronary occlusion or thrombosis is the heart attack which is characteristic and usually easy to diagnose. It also produces typical changes in the electrocardiogram. It occurs most often between the ages of 50 to 60 years, but one-third the cases occur before 50. The great majority of patients have had high blood pressure and angina. An attack is the result of a sudden complete obstruction of one of the coronary arteries by a clot cutting off the blood supply to a large area of the heart, causing death of the affected muscle—cardiac infarction. A clot does not form in a coronary artery unless that artery is already hardened or diseased.

In a series of 1700 attacks of coronary occlusion detailed histories have revealed that the attack began practically always during sleep, rest or some routine activity, during or directly after unusual strain in only two per cent.

Such cases are conveniently divided into three groups—laborers and workers, storekeepers and business men, and professional persons. The proportion of each of these groups was practically the same as in the general population of New York City. Obstruction of a coronary artery takes place

in the natural course of coronary artery disease, and is not caused by exertion even if the latter is unusual.

It takes time for the occlusion to form and in some patients the final obstruction happens to take place in the course of their work, but it is not brought on by it. This explains the lesser degrees of pain several days or weeks prior to the acute attack.

Cardiac infarction may occur without coronary occlusion. The hardened coronary arteries are too narrow to permit an increase of blood to flow through them which is required when the patient exerts himself or becomes excited. As a result of not receiving enough blood and oxygen the muscles become necrotic or infarcted. This results in pain and even in death. This is coronary insufficiency with infarction or necrosis of the heart and may be caused by effort, excitement or trauma.

An operation, even if minor, may be followed by heart involvement. This is usually due to coronary insufficiency but in some cases it is possible that coronary occlusion is induced by operation.

Rheumatic fever usually first attacks in childhood or adolescence; recurrences are very common. During the acute stage there is an acute endo- and myocarditis. In some cases a chronic deformity of the valves gradually takes place over months or years. If a murmur is discovered following some unusual strain it is almost certain that the murmur antedated the exertion by many months.

Syphilis often results, after a number of years, in deformity of the aorta valve or in disease of the aorta, in which a bulge or aneurysm may form. These changes, due solely to the disease and not to occupation, effort or trauma, occur very insidiously and gives rise to symptoms only after the lesion is fully developed. Rupture of such an aneurysm may possibly result from severe trauma, but not from effort.

The heart and large blood vessels may be traumatized as a result of external injury directly to the chest or indirect to the abdomen, with or without penetration of the wall. Usually there is blood in the pericardial sac.

It is unlikely that effort can produce changes in the valve even if it was previously diseased; but trauma of the heart may cause rupture of a valve, though very rarely indeed.

A blow against the chest or abdomen may cause functional derangement or bruise of the heart. In the former there are no anatomical changes, but, as in concussion of the brain, there is a physiological disturbance in the function resulting chiefly in irregularities in rhythm. If the impact of the chest wall against the heart is more forceful, damage in the heart muscle may result, chiefly hemorrhages

and lacerations. It is likely to result from the chest striking forcefully against a steering wheel. When the heart is bruised, its failure, with congestion of the lungs, may set in acutely and result in death; or it may be more gradually evidenced by swelling of the liver and legs.

Trauma never precipitates coronary occlusion or thrombosis.

Repeated attacks of pain or persistent angina pectoris over months or years should not be attributed to injury to the heart except in the rarest cases.

Rarely trauma may produce an infection and result in blood poisoning with infection of the heart valves, that is, an acute malignant endocarditis. This is the only type of endocarditis which is compensable.

A person with heart disease may sustain an accident as a result of temporary disability due to the disease, the accident may erroneously be considered the cause of the heart condition.

An irregularity of the heart rhythm may set in suddenly during heavy work or after unusual strain. The most common serious irregularity is auricular fibrillation. If it persists heart failure is likely to ensue. The irregularity usually sets in without any precipitating factor, it may follow an effort or injury in which case it is compensable even if the heart was abnormal.

Paroxysmal tachycardia is particularly apt to occur in persons with normal hearts. Premature beats following severe exertion or excitement have very little significance.

Carbon-monoxide poisoning does not produce classical coronary occlusion or thrombosis.

In effort syndrome chest pain may be quite severe. It occurs in persons constitutionally nervous. Acute symptoms may be precipitated by an accident, a fright, or an unpleasant task.

In determining compensability following effort or trauma it is essential to obtain a very complete and accurate history as soon after the effort or trauma as the condition of the patient permits.

DOCTOR CHARLES DEWITT COLBY

On the 23rd of September, after nearly two years' forced retirement from practice because of illness, Dr. Charles DeWitt Colby breathed his last.

Charles Colby was born at Jackson, Michigan, October 23rd, 1865. He was graduated in medicine by the University of Michigan in the Class of 1892. The high quality of his work at Michigan gained him appointment as chief of staff of the University Nose and Throat Clinic.

In 1898 Dr. Colby served as assistant surgeon to the 31st Michigan Volunteer Infantry in the

Spanish-American War. He saw service at Chickamauga Camp, in Puerto Rico and in Cuba. When he was mustered out with his regiment in June, 1899, he had been promoted to the rank of Major Surgeon and was given by his Commanding General a Special Order citation for his valuable service in the army. A special course in the Army Medical School was pursued to graduation from that institution in 1905.

In 1911 Dr. Colby removed to Asheville and associated himself with the late Dr. W. L. Dunn in research and private practice in tuberculosis. In this field he contributed to the advancement of knowledge and ministered to thousands of patients. His profound knowledge of the disease, tuberculosis, and of the psychology of patients in general and of tuberculous patients in particular, made it inevitable that he would be extraordinarily successful in his chosen work. He early associated himself with his fellow-doctors in local, state, regional and national medical societies, and was an unusually faithful attendant on, and contributor to, their sessions.

While he recognized some of the advantages of socialized medicine, he was ever an ardent advocate of organized medicine, and the role played by the family doctor in the home and in society at large. While welcoming the new methods of diagnosis and treatment according to their proved value, he never ceased to follow the well-tried and proven paths.

Lure of the out-of-doors, not need for treatment for tuberculosis, brought Dr. Colby to North Carolina. For years he walked the mountains and valleys of Buncombe, studying her skies, her plants, her minerals and her people, until he came to be an authority on all these subjects, and the understanding friend and loved doctor of a multitude of mountain folks.

Besides his widow, Dr. Colby leaves a son, Charles, Jr., now a senior medical student at Duke, to carry on the medical tradition.

DOCTOR HENRY NORRIS

In the early morning of October 6th, Dr. Henry Norris died suddenly at his plantation home on Waccamaw Neck in the coastal country of South Carolina. A few hours earlier he had arrived at Litchfield Plantation by plane from his summer residence in Maine, where he had been in declining health for a number of months. A great man, a skillful surgeon, and a beloved character has passed on and the hearts of a multitude of friends are filled with grief and sorrow. He came from an illustrious ancestry in Philadelphia where a number of the Norris family have brought lustre and fame to the medical profession.

Henry Norris was born May 27th, 1875, the son of Joseph Parker and Isabel (Fry) Norris of Philadelphia. He received his M.D. degree from the University of Pennsylvania in 1896 and was interne in the University Hospital 1896-98. During 1898 he continued his studies in Berlin. On August 3rd, 1898, he married Miss Ethel Bowman Wheeler of Philadelphia, and to this union were born Susan W., Henry, Jr., Ethel Stuart and Charles Norris. From 1900 to 1906 he was Instructor in Surgery at the University of Pennsylvania, doing special work with the late Dr. Charles Frazier and Dr. Joseph Price. He was a member of the Philadelphia College of Surgeons, Pediatric Society, etc.

In 1906, together with Dr. M. H. Biggs, he was founder of the Rutherford Hospital at Rutherfordton, N. C. At that time there was no hospital between Asheville and Charlotte, and surgery as a specialty was in its infancy in North Carolina. Both men were well trained surgeons and success crowned their efforts from the beginning. As the years went by many thousands of patients sought relief at their hands and the Hospital won an enviable reputation.

As a former member of the famous City Troop of Philadelphia, Dr. Norris was always interested in military science. In 1916 he commanded a medical detachment of the North Carolina National Guard on the Mexican border. Later he went to France with the 30th Division and became Division Surgeon. He was detached from the Division to head an Operating Team in evacuation and mobile hospitals. He returned to the U. S. A. gravely ill but after a number of months resumed his work at the Rutherford Hospital. His great generosity and charity brought happiness and relief to a multitude of poor and needy and he was loved by all who were fortunate enough to know him.

Aside from his busy life in the profession, he was a tireless worker. He found time to better the community in which he lived and took a leading part in all helpful civic work. His hobbies were dogs, hunting and fishing and into his hospitable home came friends from many parts of the country to join with him in these sports.

In 1925 he purchased a large plantation on Waccamaw Neck near Georgetown, S. C., and retired from active practice. At Litchfield Plantation he and his charming family entertained their many friends. Dr. Norris soon learned that there were many hundreds of Negroes in the community too poor and too far away to obtain medical attention. He gave them his time and substance and, together with friends, built a small hospital for these people where they could be treated absolutely free.

We salute him for the magnificent life he led, the joy and happiness he gave to so many people, and the heads of a host of friends are bowed in profound sorrow at his passing.

—R. H. CRAWFORD, M.D.,
Rutherford Hospital.

NEWS

THE THERMAL BELT (N. C.) MEDICAL SOCIETY met at the Cleveland Hotel, Shelby, on Thursday, October 16th, at 6:30 p. m. After dinner at 7:00 p. m., the following program was rendered:

Effective Therapy in Chronic Alcoholism, Dr. T. B. Mitchell, Shelby—Discussion by Dr. W. J. Lackey, Falls-ton.

The Local Use of Sulfonamides, Dr. William St. J. Jervey, Tryon.

The Parenteral Use of Sulfonamides, Drs. L. W. Hagna and Paul McBee, Marion.

Observation in China, Dr. L. L. Wilkinson, Rutherford-ton.

H. C. Thompson, M.D., Sec.

DR. B. M. KAGAN announces the removal of his offices to 1207 West Franklin street, Richmond. Practice limited to pediatrics.

DR. ROBERT L. GARRARD announces the opening of offices in Greensboro, N. C., for practice in Neurology and Psychiatry.

DIED

Dr. C. C. Orr, Jr., 31, died October 27th at his home in Beverly Hills, Asheville, N. C. Born in Asheville in 1909, the son of Dr. and Mrs. C. C. Orr, he was graduated from Asheville High School in 1925 and received his B.S. degree at Davidson where he was a member of the O. K. D. fraternity. He also was a member of Scabbard and Blade, honorary military fraternity, and Kappa Sigma, social fraternity. He was president of the college glee club at Davidson during his senior year. Dr. Orr was graduated in medicine from the University of Virginia in 1933. At Virginia she was made a member of Phi Beta Kappa, A. O. A. and Phi Beta Pi fraternities and of "The Raven" society. He interned in surgery at the University for two years and then went to the Mayo Clinic at Rochester, Minn., to serve a three-year fellowship in surgery. He remained at Rochester for nine months and then was called back to Virginia to serve a surgery residency. In 1939 he gave up the residency because of ill health and returned to Asheville, where he practiced medicine with his father to the limit his health permitted.

Surviving are the parents and a brother, Dr. Robert B. Orr, of Boston.

Dr. Jesse Martin Shackelford, 72, founder of Shackelford Hospital, Martinsville, died at his home at Martinsville on October 2nd, following a paralytic stroke suffered a few days before.

Col. Michael A. Dailey, 59, chief surgeon of the Army's Third Corps Area, was instantly killed October 27th when the car in which he was riding was struck by the Baltimore and Ohio's Royal Blue streamliner at a crossing.

Dr. Louis Klein, director of clinical research at Hoffmann-LaRoche, Inc., Nutley, died October 24th after a heart attack at his home at Upper Montclair, at the age of 56. Dr. Klein had been clinical research director at the pharmaceutical plant since 1935. For 15 years before join-

ing the Nutley concern he was associated with the Parke-Davis Co. in New York and Detroit. At Hoffmann-LaRoche he also was editor of the *Roche Review*.

Dr. James G. Trant, 60 years of age, a graduate of the Medical College of Virginia 1906, died at his home in Richmond on October 29th.

Dr. Menas Sarkis Gregory, 64, neurologist and former director of the Bellevue Hospital psychiatric division, died November 2nd while golfing. Prominent as a psychiatric consultant and instructor, he served at Bellevue for 30 years. During his tenure, which ended in 1934, he was shot and wounded by a maniac during an examination.

Max Broedel, 71, recognized as founder of the art of medical illustration in this country, died October 26th after several weeks illness. He became anatomical artist at the Hopkins Medical School in 1894, was made associate professor of art as applied to medicine in 1911, and retired in June, 1940.

Born in Leipzig, Germany, June 8, 1870, Broedel was educated at the Academy of Fine Arts there and the University of Leipzig.

OUR MEDICAL SCHOOLS

MEDICAL COLLEGE OF VIRGINIA

Dr. Sidney S. Negus, professor of chemistry, attended the Fiftieth Anniversary celebration of the University of Chicago.

Dr. William B. Porter, professor of medicine, has been re-elected a visiting professor on the faculty of the University of Puerto Rico.

Dr. Harry Walker, associate professor of medicine, has been elected to membership in the American Clinical and Climatological Association.

Dr. Lee E. Sutton, Jr., professor of pediatrics, attended the annual meeting of the American Academy of Pediatrics in Boston.

A group of three bears, in stone, by Mrs. Anna Hyatt Huntington, has been received; the setting in the courtyard of the new hospital has almost been completed. This group is the gift to the college of Mrs. Huntington and her husband, Mr. A. M. Huntington. Funds for the landscape treatment were by an anonymous friend of the institution.

The college acted as host to the Association of American Medical Colleges, October 27th-29th, and the intensive effort of many made this a notable occasion. This group can, necessarily, meet but once in a generation in one place and the college and Richmond are very proud that they were here for this meeting.

Alumni of the School of Medicine held a well-attended dinner at the Cavalier Hotel during the recent meeting of the Medical Society of Virginia. Dr. T. Dewey Davis, president of the Alumni Association, presided. Dr. P. St. L. Moncreu, who had made local arrangements most acceptably, assisted with the meeting and spoke briefly. Other speakers were Dr. W. L. Harris, member of the Board of Visitors of the college; Dr. Roshier W. Miller, member of the faculty, and President W. T. Sanger.

Alumni of the School of Medicine of the Washington, D. C., Chapter met October 3rd at The Mayflower. Dr. C. C. Coleman, professor of neurological surgery, addressed the group at a luncheon meeting. President W. T. Sanger also attended the meeting and spoke briefly.

Dr. J. M. Northington, of Charlotte, North Carolina, represented the college at the inauguration of Dr. John R. Cunningham as president of Davidson College, Davidson, North Carolina, October 16th-17th.

DUKE

At the beginning of the autumn quarter, there were 262 medical students—76 first-year, 62 second-year, and 124 juniors and seniors; and 169 pupil nurses were enrolled.

From October 16th-17th the Annual Post-Graduate Symposium on Problems of Civil and Military Emergencies was held, in which the following participated: Dr. George J. Heuer, of Cornell Medical College; Dr. John Scudder, of the College of Physicians and Surgeons, Columbia University; Dr. J. E. M. Thomson, Lincoln, Nebraska; Dr. Harry Stack Sullivan, of the Washington School of Psychiatry; Dr. Alfred R. Shands, Medical Director of the Alfred I. duPont Institute of the Nemours Foundation, Wilmington, Del.; Dr. John F. Fulton, of Yale University; Dr. Philip D. Wilson, of Columbia University; Dr. Frank D. Dickson, of the University of Kansas; Dr. Wilder G. Penfield, Director of the Montreal Neurological Institute; Dr. T. T. Mackie, of the College of Physicians and Surgeons, Columbia University; Dr. Alvan L. Barach, Columbia College of Physicians and Surgeons; Dr. George E. Bennett, of the Johns Hopkins University; Dr. John M. Converse, Plastic Surgeon at the American Hospital in Britain; Captain Charles S. Stephenson, of the U. S. Naval Medical School; Dr. Russell L. Cecil, of Cornell University Medical School.

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BOOKS



OMISSIONS FROM OCTOBER BOOK REVIEWS

P. 574—A TEXTBOOK OF PATHOLOGY, edited by E. T. BELL, M.D. *Lea & Febiger*, Philadelphia. \$9.50.

P. 576—IMMUNITY AGAINST ANIMAL PARASITES, by JAMES T. CULBERSON, *Columbia University Press*, Morningside Heights, New York City.

DISEASES OF THE VEINS AND LYMPHATICS OF THE LOWER EXTREMITY, by C. H. VEROVITZ, M.D.; A Manual of Veins and Lymphatics of the Lower Extremity for Students and Practitioners. *The Christopher Publishing House*, Boston. 1941. \$6.00.

It is said that one out of six adults are afflicted with varicose veins. Certainly it is a very common and very troublesome disease condition. The book is based on the author's fifteen years of experience in the Varicosity Clinic of Saint Vincent's Charity Hospital, in Cleveland. It is emphasized that not all ulcers on legs showing varicose veins are varicose ulcers.

The chapter on thrombophlebitis, its prevention and cure, is especially well done. The description of the use of leeches in the treatment is instructive and entertaining. Minute directions are given for

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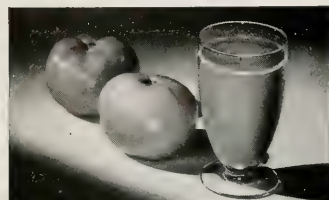
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determining the patency of the different sets of veins.

A valuable diagnosis chart differentiates five vascular diseases of the lower extremities. A historical note recounts the evolution of the operative treatment of varicose veins, another the evolution of the injection treatment.

This book is written in plain, straightforward language, evidently by one familiar with the details of his subject. There is no redundancy. The author gives you his opinions on diagnosis and on treatment without waste of words, and without that multiplicity of means for accomplishing an end which denotes an author's lack of confidence in any means. A remarkably good covering of the subject.

INFANTILE PARALYSIS: A Symposium Delivered at Vanderbilt University, April, 1941. Published by The National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York City.

This book is a printing of six lectures delivered at Vanderbilt University April 7th, 8th, 9th, 14th, 15th and 16th, 1941, under the auspices of The National Foundation for Infantile Paralysis.

Subjects of the Lectures are:

Lecture 1. History of Poliomyelitis Up to the Present Time, by Paul F. Clark, Ph.D., Professor of Bacteriology, The University of Wisconsin Medical School; Lecture 2. The Etiology of Poliomyelitis, by Charles Armstrong, M.D., Senior Surgeon, United States Public Health Service; Lecture 3. Immunological and Serological Phenomena in Poliomyelitis, by Thomas M. Rivers, M.D., Director, The Hospital of The Rockefeller Institute for Medical Research; Lecture 4. The Pathology and Pathogenesis of Poliomyelitis, by Ernest W. Goodpasture, M.D., Professor of Pathology, Vanderbilt University School of Medicine; Lecture 5. The Epidemiology of Poliomyelitis, by John R. Paul, Professor of Preventive Medicine, Yale University School of Medicine; Lecture 6. Treatment and Rehabilitation of the Poliomyelitis Patient, by Frank R. Ober, M.D., John B. and Buckminster Brown Clinical Professor of Orthopedic Surgery, Harvard University Medical School.

As a whole the lectures give in brief the knowledge we have of this disease.

A comprehensive bibliography is carried for the use of those who wish an encyclopedic knowledge of the subject.

OCCUPATIONAL DISEASES: Diagnosis, Medicolegal Aspects and Treatment, by RUTHERFORD T. JOHNSTONE, A.B., M.D., Director of the Department of Occupational Diseases, Golden State Hospital, Los Angeles, California; Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine. Illustrated. *W. B. Saunders Company*, Philadelphia and London. 1941. \$7.50.

Occupational diseases and injuries make up a larger and larger part of the practice of medicine and surgery as machinery multiplies. As compensation laws are put on the statute-books and more and more cases get into court because of real or alleged occupational diseases, it comes about that a doctor needs to know the law as well as the medicine of such diseases.

Part I concerns itself with Workmen's Compensation; Part II with ill effects of Gases, Solvents and Fumes; Part III with Metals; Part IV with Dusts; Part V with Backs and Hernias; Part VI with Dermatoses; Part VII with Occupational Cancer, Heat and Electrical Injuries and Caisson Disease; Part VIII, The Medicolegal Relationship of Trauma to Disease, Malingering and The Pre-employment Examination.

An Appendix gives a Table of Toxic Thresholds of Common Industrial Substances.

Few indeed will be the readers of this book-notice who do not stand in need of just the kind of information as is to be had from this excellent book.

DOCTORS ANONYMOUS: The Story of Laboratory Medicine, by WILLIAM McKEE GERMAN, M.D., with an in-



roduction by Paul de Kruif. *Duell, Sloan and Pearce*, New York. 1941. \$2.75.

An entertaining book to those who like melodramatic writing.

The "anonymous" doctors are pathologists. The various activities of doctors practicing in this specialty and something of its history are narrated in typical Hollywoodese—the very same style as that de Kruif uses in the preface, and everywhere else that the reviewer has seen his output.

INFANT NUTRITION: A Textbook of Infant Feeding for Students and Practitioners of Medicine, by WILLIAM McKIM MARRIOTT, B.S., M.D., Late Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital; Revised by P. C. JEANS, A.B., M.D., Professor of Pediatrics, College of Medicine, State University of Iowa. Third edition. *The C. V. Mosby Company*, 3523-25 Pine Boulevard, St. Louis. 1941. \$5.50.

Dr. Jeans was associated with Dr. Marriott for a number of years, and so is well qualified to revise Dr. Marriott's books for newer editions. Clinical and laboratory research of the past score of years has built on a solid basis a well-nigh perfect structure of knowledge of infant nutrition. Than Dr. Marriott was, or Dr. Jeans is, no one is able to speak with more authority.

OFFICE ENDOCRINOLOGY, by ROBERT B. GREENBLATT, B.A., M.D., C.M., Professor of Experimental Medicine, University of Georgia School of Medicine. *Univ. of Ga. School of Medicine*, Augusta, Ga. 1941. \$2.00.

This is a printing in an abbreviated form of a series of lectures by the author to a post-graduate class in Office Endocrinology. The 100-pages of text will clarify for any attentive reader a particularly cloudy subject of great importance. The author is qualified to speak with authority, and he has put into a booklet all that is known on this subject which can be translated into every-day usefulness to patients. It is a high achievement.

THE AVITAMINOSES: The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases, by WALTER H. EDDY, Ph.D., Professor of Physiological Chemistry, Teachers College, Columbia University; and GILBERT DALLDORT, M.D., Pathologist to the Grasslands and Northern Westchester Hospitals, Westchester County, New York. Second edition. *The Williams and Wilkins Company*, Baltimore. 1941. \$4.50.

The ready acceptance of the first edition and the increase in knowledge of the subject have required the present publication.

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FROM CRETIN TO GENIUS, by DR. SERGE VORONOFF. *Alliance Book Corporation*, 212 Fifth Avenue, New York. 1941. \$2.75.

Among the arresting chapter heads: The Soul and the Mind; From Cretin to Genius; The Role of Chance in the Creative Process; The Origin of Genius; The Struggles of Genius; From Genius to Cretin.

The book is an odd mixture of rather excited statements of well known facts, and rather astonishing would-be explanations of these facts. Those who love to be mystified and dabble in "supernaturalism" will find the volume interesting.

SYNOPSIS OF THE PREPARATION AND AFTER-CARE OF SURGICAL PATIENTS, by HUGH C. ILGENFRTZ, A.B., M.D., Instructor in Surgery, Louisiana State University School of Medicine; and RAWLEY M. PENICK, JR., Ph.B., M.D., F.A.C.S., Professor of Clinical Surgery, Louisiana State University School of Medicine; with a foreword by URBAN MAES, M.D., D.Sc., F.A.C.S., Professor of Surgery and Director of the Department, Louisiana

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State University School of Medicine. *The C. V. Mosby Company*, 3523-25 Pine Boulevard, St. Louis. 1941. \$5.00.

The foreword tells us that the greatest advances in surgery of recent years have been made in pre-operative and postoperative care, that much of the future progress will result from coöperation between the research and the practicing surgeon.

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Subjects deemed worthy of special consideration include fluid and electrolyte balance; shock; transfusion; general preoperative measures, among them permission and reassurance; general postoperative measures, from those oxygen administration and blood chemistry values.

Fifty-five well chosen illustrations supplement the text to make of this volume an excellent guide to proper care of the surgical patient from the time he enters the hospital until he leaves; and the faithful carrying out of directions here given will add to the patients' comfort, shorten hospital stay, lessen complications and sequelae, and reduce the hazard to life.

DISEASES OF WOMEN, by HARRY STURGEON CROSSEN, M.D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; and ROBERT JAMES CROSSEN, A.B., M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School

of Medicine. Ninth edition, entirely revised and reset, with 1127 engravings, including 45 in colors. *The C. V. Mosby Co.*, 3523-25 Pine Boulevard, St. Louis. 1941. \$12.50.

The first edition appeared in 1907, the ninth in 1941. Each has represented the best in knowledge of the subject for its time. Chapter heads are: Anatomy and Physiology; Gynecologic Examination and Diagnosis; Treatment Measures; Diseases of the External Genitals and Vagina; Relaxation and Fistulae; Displacement of the Uterus; Inflammatory and Metabolic Disturbances of the Uterus; Non-malignant Tumors of the Uterus; Cancer of the Uterus; Pelvic Inflammation; Other Diseases; Diseases of the Ovary and Parovarium; Malformation; Sterility and Sexual Disturbances; Miscellaneous Disturbances; The Lower Intestinal Tract in Relation to Gynecology; Invasion of the Peritoneal Cavity; After-Treatment in Operative Cases; Medicolegal Points in Gynecology.

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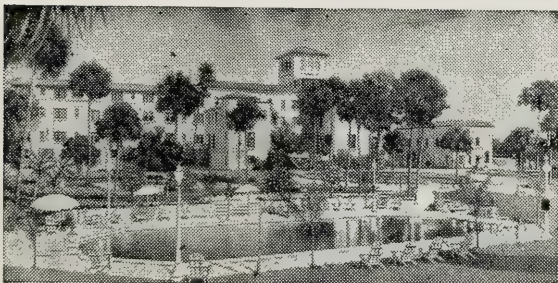
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FUNCTIONAL PATHOLOGY, by LEOPOLD LICHTWITZ, M.D., Chief of the Medical Division of the Montefiore Hospital; Clinical Professor of Medicine, Columbia University, New York. An extensive bibliography follows each chapter. 570 pages; 198 illustrations, charts and tables; index. Cloth, \$8.75 postpaid. *Grune & Stratton, Inc.*, 443 Fourth Avenue, New York.

Functional Pathology is offered by the author as a term for the science which analyzes the mechanism of symptoms and signs of disease.

From the choice of these subjects for discussion in the light of his definition of his choice of a name for the work, it may well be gathered that the author has written an unusual and instructive book.

Among the subjects given one or more chapters are: General Endocrinology; Heat Regulation, Hyperthermia, Hypothermia; Regulation of Metabolism; Functional Pathology of the Thyroid Gland; Mechanism of the Manifestation of Graves' Disease and the Interrelations between the Thyroid and the other Endocrine Glands; Mechanism of Defense; Mechanism of Arthritis; Mechanism of Obesity; Disorders of the Skeleton; Mechanism of Pluriglandular Diseases; Essential Hypertension; Mechanism of Blood Diseases; Mechanism of Bright's Disease; Mechanism of Hepatic Disorders.



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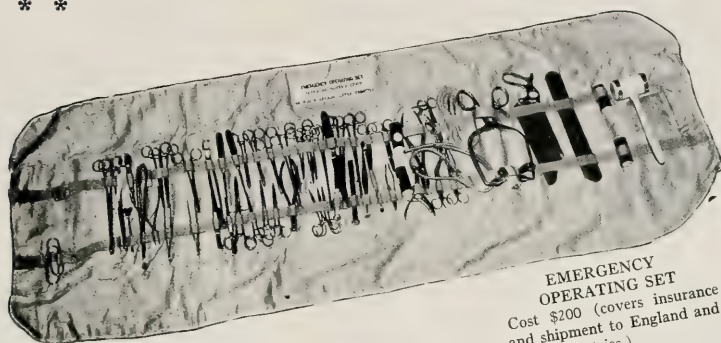
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JAMES M. NORTHINGTON, M.D., Editor

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The Local Use of Sulfonamides*

WILLIAM ST. JULIEN JERVEY, M.D., Tryon, North Carolina

FOR SEVERAL REASONS my remarks on the local use of sulfonamides are going to be brief. In the first place the material I had hoped to receive from the Charity Hospital of Louisiana did not arrive and this is the only place I have actually seen any extensive use of these drugs topically. Secondly, Drs. Hagna and McBee are to follow me and I am not sure how much their discussion will overlap mine.

At Charity Hospital before I left in July investigations on the use of sulfanilamide intraperitoneally and in traumatic surgery had been extensive. Sulfathiazole was being used, but comparative estimates had not been made. The general opinion there was that the results with both these drugs was satisfactory beyond expectations. Since I have been unable to get any statistics from there, I have gone through recent literature which most of you have probably already seen, with the result that this discussion will be unique only in its complete lack of originality.

One of the most striking reports I found was from Roosevelt Hospital, New York City, on a series of almost 1000 cases of acute appendicitis, compiled over a period of six years, 1935 to 1940 inclusive. Only those cases which were grossly acute at the operating table were considered. The management of these cases was identically the same throughout this period except for the use of sulfanilamide powder intraperitoneally during 1940. In the first five years of this series—i.e., the period without the use of sulfanilamide—a total of 741 patients with acute suppurative ap-

pendicitis was operated on. The mortality rate was 20 (2.7%), the majority directly attributable to peritonitis. In 1940 there was a total of 204 cases, 29 per cent of which received sulfanilamide in the peritoneum, without a fatality. In 14 of these cases the drug was continued by rectum or by vein; but, since it was also used thus in many of the group in the previous five-year period, the mortality reduction was attributed to the intraperitoneal implant. These investigators feel that sufficiently large intraabdominal applications will make unnecessary the systemic use of the drug.

In preparing the drug for use it is commonly placed in test-tubes in 4-, 6- and 8-Gm. quantities, then snugly stoppered with cotton. Moist heat, as in the autoclave, converts the crystals into rock-like masses. Sterilization by placing in an oven at 120° for 30 minutes results in a fine powder. Varying amounts were scattered over the peritoneum and some sprinkled between the walls on closure.

Sulfanilamide blood levels showed an immediate rise, averaging 7 mgm. per cent in 15 hours after operation. The fall in blood level was also rapid except in the cases where large amounts were used in the muscle layers. This group of investigators recommended an average adult dose of 8 Gm. intraperitoneally and 4 Gm. in the abdominal wall: in cases of appendiceal abscess with a rapid loss of the drug due to drains, as much as 20 Gm. has been used without ill effects.

No definite toxic effects were observed, though cyanosis was frequent. One case of jaundice was

*Presented to The Thermal Belt (N. C.) Medical Society meeting at Shelby, October 16th.

encountered; this seemed to be secondary to a streptococcus peritonitis and cleared up under continued administration of the drug. There were some cases in which a continued fever was attributed to sulfanilamide. Ages in the group ranged from one to 72 years. Of those cases in which sulfanilamide was used, in 45 per cent there was a diffuse peritonitis. In one case at secondary appendectomy two months later, the peritoneum appeared normal and there was no evidence of adhesions.

Drains were used in these cases as much so as they had been used in the previous five years. The group in New Orleans believe they are getting better results following appendectomy or perforating abdominal wounds when they close without drainage except in those cases contaminated by large amounts of feces or extremely thick and copious pus. In many of the cases which they closed tight with excellent results, the absence of a drain before the use of sulfanilamide powder would have been considered criminal neglect.

Most of my information on the use of sulfonamides in orthopedic surgery has been borrowed from reports of Key of St. Louis, who has done a great deal of work with both sulfanilamide and sulfathiazole locally, and is now using a mixture of the two powders. It has been found that the two drugs are dissolved independently; *i.e.*, a saturated aqueous solution of sulfanilamide will take into solution just as much sulfathiazole as will the same quantity of pure water. He recommends the joint use of the two powders, not only because of their varying action on different organisms, but also because of the fact that sulfathiazole, while not attaining as high a concentration as sulfanilamide, will last longer because of its slower absorption and excretion. Both drugs are well tolerated and do not appear to interfere with healing in patients or in experimental animals. He uses them in both clean and infected cases, regarding all cases as potentially infected regardless of technique. In 243 clean cases, using one or both drugs, he had no postoperative infections. By the use of as much powder as can be placed in the wound without interfering with coaptation (usually 1-5 Gms.) there is no appreciable delay in healing. A high local concentration is thus maintained for 48 hours of sulfanilamide (has been measured at over 600 mg. %) and a somewhat longer period with sulfathiazole. The rate of absorption and excretion varies with the amount used, surface area and blood supply.

Of contaminated wounds the percentage that can be closed successfully by primary suture after complete debridement has been greatly increased by the use of sulfonamides, though their use does not in any sense lessen the importance of adequate

debridement and immobilization. Those wounds which are considered poor risks for primary closure heal more rapidly and with minimal infection if the drug is packed in the wounds and dusted over them.

The British have obtained their best results in the handling of extensive wounds of the extremities in war casualties from the use of routine irrigation, debridement and immobilization if necessary; then packing the wound full of sulfanilamide powder, covering with sterile vaseline gauze and taping the wound heavily to approximate the edges as nearly as possible. This dressing is not disturbed for five days, at the end of which time the wounds are rather consistently clean, granulating and suitable for suture.

In civil practice in this country one source reports a 5-per cent incidence of infection following compound fractures with the use of sulfanilamide, as compared with 27 per cent in cases in which the management was otherwise the same. Another reports a similar reduction of from 54 to 5.6 per cent and a reduction in average hospitalization time from 37.7 days to 6.8 days.

In contaminated cases in which debridement is prompt Key does not consider it necessary to use the drug orally. In those cases in which there has been delay, or the adequacy of the debridement is in question, he uses full doses of sulfathiazole orally. If there is no evidence of infection, after two days the drug is discontinued. Acutely infected wounds must be left open and serum administered as indicated. In these cases packing large quantities of the powder in the wound gives good results, though not nearly so satisfactory as those in which the drug can be closed in the wound. In acute pyogenic osteomyelitis or arthritis Key advocates drainage of the focus, then the implantation of a liberal amount of sulfathiazole (or a mixture of the two) into the wound, then packing with vaseline gauze; with oral administration additional. In a few of the less severe cases of pyogenic joint involvement he has implanted the powder, then closed and immobilized the joint, and had a useful joint result.

A recent report from Chicago on the use of sulfanilamide locally after mastoidectomy is of interest here chiefly because of the comparative results obtained with, and without, drains. In cases in which sulfanilamide was used in the wound and drains inserted, the postoperative course was much as it had been before the use of the drug—purulent drainage for three to six weeks. In a later series of 13 cases, in which sulfanilamide powder was implanted, then the wound closed tight without the use of drains, in only one case was there a purulent

discharge, and the average healing time was $6\frac{1}{2}$ days.

Most of this discussion has been of hospital work, but the method can be applied to office and home use on a smaller scale. Contused or contaminated lacerations can be equally well closed without drainage after the implantation of sulfanilamide or sulfathiazole. On a surface infection which can not be packed, an ointment of equal parts sulfanilamide crystals and lanolin hastens healing but not comparably to the benefit in closed cases.

CONCLUSIONS

1. The use of sulfonamides on the peritoneum in cases of peritonitis or abscess is of proven value.
2. Their use in traumatic surgery will minimize the percentage and severity of infections.
3. Their use in no way means that there can be any let-up in technique as regards to debridement and immobilization.
4. Their presence in wounds or peritoneum does not delay healing or have any ill effect on tissue.
5. Toxic effects are rare from intramuscular, subcutaneous or intraperitoneal implantation. Overdosage is almost impossible, except intraperitoneally without drainage.
6. Therapeutic results are directly proportionate to the local concentration, therefore efficacy is greatly reduced by the use of drains.

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NEW DEVELOPMENTS IN THE DIAGNOSIS AND TREATMENT OF BRUCELLOSIS (UNDULANT FEVER)

(W. M. Simpson, Dayton, O., in *Minn. Med.*, Sept.)

Because brucellosis presents many symptoms and signs common to typhoid fever, malaria, tuberculosis and influenza, it is frequently confused with these diseases. Less often, the disease has been confused with acute rheumatic fever, subacute bacterial endocarditis, bronchitis, pyelitis, appendicitis, cholecystitis, or tularemia.

The symptoms of the acute and the chronic forms of brucellosis vary greatly. The diagnostic criteria for the acute are usually not applicable to the chronic form of the disease. There is little doubt that chronic ambulatory brucellosis is widely prevalent, is often confused with other diseases, and frequently is not recognized. Many "neurasthenics" and patients with fever of unknown cause have been found to be victims of chronic brucellosis. Less than 10 per cent of patients with chronic brucellosis have experienced a previous acute febrile illness, compatible with a diagnosis of acute brucellosis.

The only procedure by which the diagnosis of brucellosis may be established with certainty is by the cultivation and identification of the organism. The agglutination test and skin test are of considerable value in the diagnosis of acute brucellosis, but these procedures are notoriously inadequate as diagnostic aids in cases of chronic brucellosis. Both the agglutination test and the skin test will yield entirely negative results in an appreciable number of persons from whose blood *Brucella* may be recovered.

Leukopenia occurs in the majority of patients with acute brucellosis. In chronic brucellosis, either leukopenia, moderate leukocytosis or normal leukocyte levels may be found. The most striking and constant feature of the blood picture in all of the manifestations of brucellosis is an increase in percentage and absolute number of lymphocytes and by an unusually high proportion of immature forms.

It is now well established that brucellosis is caused most frequently by the ingestion of raw milk containing *Brucella*, the most important consideration in the control of the disease is adequate, controlled pasteurization of all milk and other dairy products.

It is hard to evaluate the effectiveness of any form of specific therapy in a disease characterized by natural remissions by an extremely variable symptomatology. Reported results of vaccine therapy or serum run pessimism to hyperenthusiasm.

Some have obtained an apparently satisfactory response to vaccine therapy with little thermal reaction, but the most prompt and lasting results have occurred in those who have experienced several high fever reactions.

Results of vaccine or brucellin therapy—60 per cent of patients with brucellosis obtain apparently complete recovery after a satisfactory course of either agent. An additional 25 per cent appear to obtain some benefit, while the remaining 15 per cent are not improved.

Sulfanilamide and other sulfonamide drugs have given little benefit. Artificial-fever therapy has yielded favorable results, particularly in those refractory patients who have not responded to vaccine therapy.

DOCTOR WILLIAM HUNTER

(Roland Hammond, Providence, in *R. I. Med. J.*, Nov.)

Dr. William Hunter born in Scotland in 1729, a relative of the famous Sir John and his brother William, Hunter, studied at Edinburgh under the elder Munro, came to Rhode Island about 1752, gave at Newport the first lectures in anatomy and surgery ever delivered in the colonies, possessed the largest Medical Library in New England, and died in his 47th year.

Some books from his library are now preserved in the library of Brown University.

Hunter, in 1758, was elected by the General Assembly to the office of Physician and Surgeon General to the Rhode Island Troops. As a Tory he was highly esteemed by the British and Colonial Loyalists, but when the Revolutionary War began he was bitterly hated and denounced by Ezra Stiles, President of Yale College, and other eminent patriots. The population of Newport in 1774 was 7917 whites, 1292 blacks and 9209 Indians.

In the inventory of his personal estate 273 drugs are listed in amounts varying from a drachm of cinnamon to 31 lb. of ammonia. Many of these drugs have long since departed from our pharmacies, and many are unrecognizable.

ELDERLY PERSONS who come to us with history of cold or cough and fever, accompanied by rapid weight loss and weakness, should be looked upon as highly suspicious. Tuberculosis in the aged is just as surely fatal, and frequently much more rapidly so, than is malignant disease.—E. M. Norton, Fairfield, in *Jl. Med. Assn. Ala.*, Nov,

Insulin-Shock Therapy*

OTTO BILLING, M.D., Asheville-Durham

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SINCE Sakel gave his first lecture on Insulin-shock treatment before a session of the Vienna Chamber of Physicians in 1933 many articles have been published in specialized journals, in periodicals for the general practitioner, and many reports, by far too detailed, have been made to the laity. In particular, the articles to the lay public caused very optimistic expectations which at times could but discredit the treatment. In one of such attempts to publicize the treatment recovery was reported after a single shock. However, reliable statistics prove that much can be done to improve the recovery rate of schizophrenic patients. Due to situations beyond our control we are not able to report to you the present condition of patients whom we treated in 1933 and 1934 in Vienna. Such a report would be particularly helpful since it would reach back over a period of seven to eight years.

Not to tire you with figures we will quote only briefly the findings of a follow-up study of 1039 cases reported by the New York State Department of Mental Hygiene.¹ We selected this set of statistics because it impresses us as a conservative one. It shows that 30 days after termination of the treatment 65 per cent of all patients were either recovered or improved. In comparison only 22 per cent recovered or improved without treatment. However, two years later the percentage in insulin-treated cases dropped from 65 per cent to 45 per cent. It is interesting to note that almost all of the fully recovered cases could maintain their original gain and insulin recoveries are three to four times higher than spontaneous recoveries. The authors of that publication expected stabilization of the results after two years and that no major changes would take place after that time.

We might add that that follow-up study was done on cases regardless of duration of disease before treatment. Now we know that the best results are usually obtained in early cases with a duration of less than six months. Recently, we treated a patient whose illness lasted over three years, with a steady increase of the psychosis and without lucid intervals. After we started treatment the patient began to improve steadily. We can certainly draw the conclusion that this improvement was too closely associated with the beginning of treatment to be incidental. This case demonstrates that we

can not be too strict in setting the indications when to, and when not to, use shock treatment. In general we can expect that the better the personality is preserved the better the prognosis. No shock treatment can build up a dilapidated, emotionally and intellectually reduced patient. Before we start treatment we should ascertain that there is something left to build upon. The other factors still important are of secondary significance. Of course, in most cases a long duration will coincide with a poor preservation of the original personality, but not necessarily so. In brief, paranoid schizophrenias or catatonic excitements with well preserved personality, whose psychoses started less than six months previous to the beginning of treatment, give the best prognosis. Catatonic stupor responds better to convulsive-shock treatment. Sometimes it happens that patients show good initial response to convulsive treatment; they improve rapidly at first but soon slip back again. In that case we recommend continuing with insulin shock. On the other hand, patients may respond very slowly to insulin; in such cases we may be able to hasten improvement with a few convulsive shocks. The prognosis is less hopeful in hebephrenic cases and poor in simple dementia.

Case 1.—A 24-year-old white woman was admitted to the hospital because of persecutory ideas, ideas of reference, acute excitement and assaultiveness.

This patient is the youngest living child. There was much tension between her father and mother, because of the father's unfaithfulness. Many scenes occurred in the patient's presence. The patient resented intensely the father's attitude. She married at the age of 21 an intellectually and socially inferior husband. Dream material suggested strong sexual conflicts and dissatisfaction with the husband.

Eleven months previous to admission she bore a son. The dream material revealed that the pregnancy and birth produced also strong conflicts. For several nights after the delivery, while still in the hospital, the patient was frightened by feeling that "someone" tried to come in her room through the window. From then on she was afraid in the dark while previously she was not. She thought she would be unable to nurse her baby and began to be very apprehensive about its proper feeding. During the following months the patient became increasingly tense. She developed ideas of reference, thought that articles in the papers referred to her, that relatives and friends acted in a peculiar way in order to impress on her that she was "silly." She began to tear up books which she felt referred to her; became assaultive, struck her husband when he wanted to give her medicine which she had been taking regularly.

Insulin-shock treatment was started. On the fourth day of treatment she began to show partial insight into her

*Read in part to the North Carolina Neurological and Psychiatric Association in Morganton, N. C., October 24th, 1941.

condition for the first few hours after termination of treatment. "I feel crazy . . . there is nothing wrong with me except I need someone to straighten me out so I will get rid of those crazy ideas I have." During the first week of treatment this improvement was strictly associated with the termination of treatment. In the evenings of those days she was suspicious again, prayed much, exhibited a good many mannerisms.

After 10 comas the patient revised spontaneously many of her psychotic ideas; after 10 more she was free of any psychotic symptoms, and showed complete insight into her condition. After the first 10 treatments she had already become interested in her surroundings, associated with other patients, spontaneously took part in conversation, showed good emotional response. The patient was dismissed and is carrying on with her usual work. In repeated follow-up examinations no pathological symptoms could be elicited.

Success in insulin-shock treatment depends largely on choice of dosage adequate for producing reactions of the proper duration and depth, at appropriate intervals and in appropriate total number. To ascertain the correct shock dosage we give before breakfast 15 to 25 units of insulin and increase gradually, first by five or 10 units, later more until we produce a coma of sufficient depth. The shock-dosage is variable from patient to patient, frequently even in the same individual. In our cases, the lowest insulin dosage necessary to produce deep coma was 18 units, the highest 400 units.

In a typical deep shock the patients become somnolent during the first hour of coma, at times they are euphoric; start to perspire and become hypotonic. During the second hour the consciousness becomes increasingly clouded, the psychic functions slowed and less precise; in some patients motor excitement begins and the psychotic symptoms may be temporarily aggravated. During the 3rd hour the patients are unconscious, pupils become dilated but react to light, pulse rate and motor restlessness have increased, frequently the face is flushed, the temperature has fallen, often as low as 93° or even lower. During the fourth hour an irregular distribution of tonus appears together with generalized, repeated torsion spasms. Later the pupils become small, react sluggishly to light, corneal reflexes are sluggish and finally absent, pulse rate has dropped, respiration becomes shallow; the temperature has started to rise again.

Roughly speaking, we can differentiate three stages during the insulin shock—subshock, medium coma and deep coma. During subshock the cortical centers are depressed; we find clouded consciousness, sometimes euphoria, aphasia, motor restlessness, increased pulse rate during the first two hours after administration of insulin provided the proper dosage is used. During the 3rd and 4th hour we find evidences of stimulation of the sub-cortical centers—pronounced motor excitement, fast pulse, flushed face, dilated pupils, primitive

movements such as athetoid, choreiform and hemiballistic movements.

During the deep coma the pupils are small and react very slightly or not at all to light, corneal reflexes are absent, pulse rate is slow (around 60), there is marked pallor, respiration is shallow, at times of Cheyne-Stokes type. This stage should not be reached before four to 4½ hours after administration of insulin and the patients should remain for one-half hour in this stage. We consider it essential that this stage be reached, as only really deep comas are helpful. The more superficial stages of insulin shock are only of symptomatic help. This deep stage seems to be due to a beginning depression of the vital centers in the medulla oblongata. At this stage we terminate by giving 200 grams of sugar in 500 c.c. of water by nasal tube. A few minutes after the administration of sugar the shock may become temporarily deeper—the administered sugar is a stimulus for the pancreas to produce its own insulin—but after 5-10 minutes the patient begins to respond and should be fully awake after 15-20 minutes, otherwise one should give glucose by vein without delay.

Right after awakening the patient is frequently euphoric, often free of psychotic symptoms, which then return one-half to one hour after termination; with additional treatments these lucid intervals become longer and longer. After the patient has improved we may find a very interesting reversal of symptoms: the patient no longer shows any psychotic symptoms during the daytime, only during the awakening period, and we term this phenomenon the "reactivated psychosis." As long as there are such symptoms, we have to continue the treatment, even when the patient appears normal during the rest of the day.

In general we give at least 15 deep shocks, the number varying with the great individual differences. Sakel advises giving several deep shocks after all psychotic symptoms have disappeared, so as to stabilize the patient's improved condition. If we do not see any improvement after 35 shocks, we usually stop the treatment. Rarely do we give more than 60 shocks.

I am sorry that we do not have time to discuss fully the possible complications. We are safe in saying that with care serious or fatal complications can be greatly reduced. During the first years of treatment we considered spontaneous convulsions as a serious complication. Today we think them helpful at times. You will recall our mentioning that we induce such convulsions purposely to influence the course of treatment. If the dosage is very high, the hypoglycemic symptoms appear too early and in irregular sequence; dangerous signs come forth, and we can not safely keep the patient sufficiently

long in the coma. Sudden respiratory or vasomotor failure may appear. The most serious and important complication is the protracted or prolonged shock from which the patient does not awaken even after repeated administration of sugar by tube or vein; the blood sugar has reached normal, at times higher than normal values; however, the patients are restless, do not respond, temperature is elevated, pulse and respiration are increased. A few of these patients die of cardiovascular complications. However, in most of these cases recovery is brought about after several hours, often after days; and the majority of such patients are definitely improved mentally. A case will illustrate this to you.

Case 2.—A 19-year-old college student of a prominent Alabama family was admitted to our hospital. There are several outspoken schizophrenic psychoses and schizoid personalities among the relatives. The patient was in extremely unstable surroundings among more or less psychotic relatives. The father in particular was unstable drank heavily and gambled a great deal. The mother separated from him in the patient's early childhood.

From his 2nd to his 3rd year the patient was very unstable and had temper tantrums. In his later years of childhood he became more quiet and was not further conspicuous; he made a number of good friends and mingled well. In school he was prone to be a leader up to four years previous to admission to our hospital.

Around that time he began to have difficulties in concentrating, his school work became difficult for him; he dropped in his grades, became preoccupied with religious, philosophical and political problems, was seclusive, began to hear voices, developed ideas of reference. During the next several months he became manneristic, showed objectless laughter and scattering. He developed ideas of grandeur, became very impulsive. Just before being started on insulin-shock treatment he had written a letter to President Roosevelt addressing him as "Dear Franklin." He asked in this letter that all gangsters should be instantly killed and signed it "The Leader of Humanity." On the ward he adopted an arrogant attitude typical of so many schizophrenics.

After awakening from his first shock he was pleasant, polite, thanked the nurse for her assistance; however, his presumptuous behavior returned after several hours. The second shock was protracted, lasting 13 hours. After the patient reacted from this he was pleasant, cooperative, his superior attitude had completely disappeared and did not return; he began to show interest in his surroundings and was far less introspective and preoccupied and took great interest in the hospital activities. While the patient was extremely resentful previous to that protracted shock he then became appreciative and showed partial insight.

After a pause of 10 days the shock treatment was resumed. He again showed delayed awakening from his eleventh shock, was extremely restless, temperature 106.4, pulse 198, respiration 64. However, this shock lasted 5 hours less than the first prolonged shock. The patient remained drowsy for several days. After he recovered from those effects his general conversation appeared orderly, without scattering; hallucinations, objectless laughter, ideas of grandeur had all disappeared.

We have mentioned that one of the most important factors in treatment is the sufficient depth of coma. The other factor is the psychotherapeutic

approach. According to Orenstein and Schilder⁸ the shock treatment acts on the deep organic structures of the personality. Based upon this action on the deeper-lying organic layers there occurs a re-evaluation of the personality problems. Frequently the patient may notice this himself, as one of our patients said: "That insulin stuff changes my personality . . . at first people looked drawn up in a shell, looked aloofly disinterested in what I was doing . . . now they look more relaxed and less like in a shell." The patients who are on the way to recovery are often very perplexed about the value of their psychotic ideas. In several cases they asked spontaneously to be allowed a diary. This is a very important stage during which the patients need an unobtrusive and very cautious psychotherapy. They are now vulnerable and susceptible to psychic trauma. During this stage almost all patients form a strong transference to the therapist. Because of this it is obvious that there should be only one psychotherapist, preferably the physician who gives the treatment. It is also advisable that another physician take over the handling of the administrative affairs which otherwise might give occasion to cause disturbing tension. For similar reasons the shock patient should not discuss with other patients the symptoms and treatment.

In many cases deep insulin shock may not be desired for one reason or another, as was pointed out in discussing indications for deep shock in the beginning. However, many mental patients of varied type might become difficult to manage; they become aggressive or extremely excited. These conditions require either intensive hydrotherapy, physical restraint, or high doses of sedatives. Continuous use of large doses of sedatives depress respiration and circulation, and the risk of manifestations of toxic delirium in the form of increasing excitement and hallucinations is great. In such cases insulin in subshock doses can replace sedative drugs to a great extent.

Case 3.—A 55-year old white woman has been institutionalized for the last 21 years with the diagnosis schizophrenia. She has been hallucinated, untidy and very irritable at times. Several weeks previous to insulin treatment she became increasingly confused, destructive and assaultive. While she was oriented before this exacerbation she became disoriented, very incoherent and distractible. She was started on subshock doses of insulin which were gradually built up to 60 units twice a day. With such doses she became somnolent, perspired freely and could be aroused only with great difficulty. After the first of those treatments the patient became more accessible, pleasant and cooperative. This improvement lasted for two hours on the first day. The next day, two hours after administration of insulin the patient became restless and was irritable. Prior to treatment reassurance did not help but she responded well during the hypoglycemia: "I feel so irritable. I know I am going to kick somebody again. I

am afraid it will be just like it was . . . sickness is so hard to understand." The cooperative periods became longer after each treatment and soon lasted over the whole day. To stabilize the improvement we continued for two more weeks. After that time the patient was quiet and pleasant, could resume her piano lessons and she was again able to attend movies and to leave the hospital for short rides. The difficult nursing problem created by her uncooperative behavior was relieved and the patient herself got more pleasure out of routine hospital activities and trips to town.

This case, as do many others, shows that with subshock treatment we can shorten exacerbations of even old schizophrenic psychoses. Without treatment, the patients deteriorate more and more during such acute episodes and rarely return to the same level after such a flare-up. With subshock doses of insulin we are not only able to shorten those exacerbations but we can also prevent such deteriorations. In previous attacks when we had not given those treatments the patient had always lost ground and never returned to the same level.

Another indication for subshock technique is when patients refuse to take food and constant tube-feeding brings the risk of aspiration pneumonia and ulcerative and traumatic lesions of the mucous membranes of the nose and throat. Under insulin the appetite is acutely stimulated and the psychotic delusions preventing eating may become less intense; thus the feeding problem is usually solved after a few treatments.

Case 4.—A white man, 59, with general paresis showing a clinical picture of hypochondriasis of depressed type, refused to take food so it was necessary to use gavage. After the first subshock he drank his tube-feeding; after three days of this he began taking solid food and continued doing so for months.

The use of insulin in subshock doses in the treatment of narcotic withdrawal symptoms is well known. Sakel used it before he started the deep-shock treatments in schizophrenia. Some of the drug addicts underwent such sudden personality changes after an incidental shock that it caused him to work out the classical shock treatment. Subshock doses of insulin make the withdrawal symptoms far less intense; therefore it is possible to replace morphine by the subshock hypoglycemia, discontinuing morphine completely and at once. This shortens the period of withdrawal symptoms and enables us to use this time for reconstructive psychotherapy.

For similar reasons we use subshock doses also in cases of acute alcoholism as a preventive of delirium tremens, alcoholic pseudoepilepsy etc., although symptoms of avitaminosis require the usual vitamin therapy as an adjunct.

Case 5.—A 37-year-old white man was admitted to our hospital with signs of acute intoxication. He was disoriented, hallucinated, perspired and showed coarse tremor. His pulse was fast and irregular.

The patient received 30 units of insulin daily for the first three days. Already on the second day the hallucinations had disappeared, he became oriented and the pulse was of good quality. In the afternoon of the fourth day (the day after insulin was discontinued) the patient had two grand-mal convulsions within three hours. After the patient was started on insulin again none of the convulsions returned and after six more days insulin could be permanently discontinued.

From these case histories we can see verified uses of insulin subshock treatments.⁹ In a few words, that treatment is indicated in all cases in which it is desired to quiet the excited patient or to make antagonistic and negativistic patients more cooperative. The technique is very simple and does not require special equipment or a specially trained personnel. The general practitioner can give those treatments without any previous experience. The technique of this treatment is as follows:

We start with 10 units of insulin at 7:00 a. m., omitting breakfast, and stop three hours later with a glass of sugared water (60-100 Gm. sucrose) ; or, better, a glass of orange juice also sugared. We do this whether or not the patient shows symptoms of hypoglycemia. At each injection (7 a. m., 2 and 7 p. m.) we increase the dose by 5 units until a slight hypoglycemic stage is reached—the patient begins to perspire, often complains of being hungry, weak and drowsy; sometimes there is diplopia. This stage should appear 2-2½ hours after the injection. We leave the patients in this stage for ½-1 hour and stop when they become increasingly drowsy and the speech thickens. If the dose is sufficient these symptoms appear 3 hours after administration of insulin. If these signs appear earlier the next dose has to be decreased. Often it is necessary to give a higher dose in the morning and the next two doses 5-10 units less. Apparently, the body does not utilize all the insulin of the previous treatments of the same day. After the termination of the morning dose the patients have breakfast. Lunch and supper are given at the usual hours, 1:00 and 6:00 p. m., and a light meal after the termination of the last injection at 10 p. m. Should a patient go into coma he is easily awakened by sugar (20-40 c.c. of a 33 1/3% or 50% glucose solution) given by intravenous injection.

Syringes and nasal tube should always be ready for emergencies. Muscular twitching may occur, but it is harmless. It can be easily differentiated from a true epileptiform seizure by the absence of sudden unconsciousness, cyanosis, pupillary signs etc. The muscular twitching is no indication to terminate the subshock. During the rest of the day we watch for drowsiness, perspiration, pallor, weakness, restlessness, excitement with or without hunger in an otherwise quiet patient. We give immediately sugared water to drink when such reactions occur.

If the patient's condition is improving we stop the evening dose of insulin to relieve the need of close supervision during the night sleep; but we continue the treatment for several days even after the desired effect is reached in order to stabilize the improvement.

We have tried to show that insulin shock and subshock treatment can be of great help in many cases. The shock treatment may appear very expensive; the immediate costs are high, but even careful statistics as I have mentioned in the beginning show that the immediate increase of expenses is overshadowed by the financial gain due to the

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The Management of Epidemic Respiratory Diseases*

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THE SUBJECT assigned for my discussion tonight covers considerable territory, for we must assume that the management of acute coryza, epidemic influenza and influenzal pneumonia, but also streptococcal sore throat, pertussis, measles and scarlet fever. All of these respiratory diseases were seen in epidemic form during the last world war, and most of them can be expected for a return visit if we continue to retain large groups of young men in barracks for military training. Tonight, however, I propose to devote most of my time to a discussion of the prevention and treatment of influenza and its complications. The management of pertussis, measles and scarlet fever is so much in the domain of the pediatrician that I should hesitate to invade the field. It should be noted, however, that with the exception of pertussis and the streptococcal infections, all of these epidemic respiratory infections fall into the realm of the virus-borne diseases.

The nature of viruses is not definitely known. There are several theories, however, which should receive considerable support: First, that they are entirely inanimate incitants of disease, like the virus of tobacco mosaic which Stanley has shown to be a nucleoprotein and obtainable regularly in crystalline form. Stanley's work is of the greatest importance and bids fair to throw an entirely new light on the nature of the virus problem. Other viruses, such as the agent of yellow fever, may represent forms of life as yet unfamiliar to the bacteriologist, while the virus of vaccinia may, as Rivers expresses it, be a midget in the microbial world since it contains protein, fats and carbohydrates similar to those found in many bacteria. One thing the virus diseases have in common. None of them has been cultivated in the absence of living cells. Therefore, dead or alive, they may be considered as obligate parasites. Most virus diseases are followed by permanent immunity, but there are exceptions such as the common cold and herpes simplex. Even herpes zoster may occur repeatedly in the same individual.

ACUTE CORYZA

It has now been shown by numerous observers that the nasal secretions of persons suffering from a fresh cold contain an ultramicroscopic virus which, when instilled into the nostrils of normal individuals, produces the disease. Dochez and his co-workers have succeeded in cultivating this virus

in tissue media, and even after forty to fifty passages the virus is still capable of transmitting the disease to man. Complications of the common cold, such as sinusitis, otitis media, mastoiditis and bronchitis and pneumonia are the results of secondary bacterial invaders. It has been shown that fresh colds are more contagious than colds of several days' duration. Colds are more common in winter than in summer, but perhaps not so much from the differences in temperature as from the inevitable crowding during the winter months, especially in the schools.

INFLUENZA

Influenza is a highly infectious disease which occurs most frequently in epidemic and pandemic outbreaks, during which it spreads with great rapidity. In ordinary times it is sometimes difficult to distinguish a mild case of influenza from a severe coryza. Certainly there are borderline cases which are always difficult to classify. However, in times of great epidemics of influenza the clinical pictures become quite characteristic. The onset is usually sudden with chilliness, marked general malaise, severe headache and general muscular aching throughout the body, but especially in the back and extremities. The prostration is quite marked, sometimes extreme. The temperature rises rapidly to 103-4°, or even higher. The pulse and respiration are accelerated. The patient appears listless and often the face, neck and upper thorax are deeply flushed. The conjunctivae are injected and the pharyngeal mucosa is intensely reddened. Shortly after onset the sore throat or rhinitis makes its appearance, though in not a few cases the local symptom is a dry hacking cough. Cases of influenza have been reported in which there were no respiratory symptoms, but all agree that this is an extremely rare phenomenon.

Influenza, like the common cold, has been proven to be a virus-borne disease. For many years the haemophilus influenzae was looked upon as the specific cause of the disease, but in 1933, Smith, Andrews and Laidlaw succeeded in isolating a filtrable virus from patients with influenza by inoculating ferrets intranasally with filtrates of throat washings from early cases. The infection was then transmitted from ferret to ferret and subsequently to mice. Francis has cultivated the passage virus in tissue medium and demonstrated the

*Part of a Symposium on Problems of Civil and Military Emergencies, Duke University School of Medicine, October 16th-18th.

appearance of antibodies in the blood of persons convalescing from influenza. It has also been shown by Andrews that different pandemics of influenza may be caused by immunologically distinct races of viruses.

As yet we have no practical laboratory tests for the diagnosis of influenza. The antibodies of course appear after the disease is over and are therefore of no practical importance from the standpoint of diagnosis.

The methods of treatment of these two prevalent and important infections are similar, but perhaps may best be discussed separately. For example we have not yet reached the Utopian state in which every victim of the common cold would be put to bed and kept there until his symptoms disappeared. Such a drastic therapy would probably be better for the patient and certainly much better for the community in general. I know of no group of workers who are systematically put to bed for acute coryza except trained nurses. In the New York Hospital this is routine treatment. As a result there is a minimum spread of colds from nurse to nurse and from nurse to patient and a small incidence of complications among the nurses who have the colds. So far as actual treatment of the common cold is concerned it may be classified as local and general. Spraying and gargling with antiseptics is much advertised by manufacturers of patent cold killers, but is ineffectual because it is impossible to free the mucous membrane completely of bacteria by this method. Perhaps the safest and best of all sprays and gargles is the hot saline solution. Occasionally colds can be checked in the early stage by the local application of silver nitrate or 10 per cent argyrol. Usually, however, the cold has a good start before the application is made. The common cold usually lasts only three to four days, hence the treatment should be mainly for the symptoms as they arise. Rest should be made imperative if the temperature is 100° or over, or if the patient is a victim of any chronic systemic disease, such as diabetes mellitus, nephritis, rheumatic fever, heart disease or tuberculosis. Striking relief is offered by some of the coal-tar derivatives, such as the well-known APCC capsule consisting of codeine, aspirin, phenacetin and caffeine. In some patients colds will be completely aborted by the popular codeine and papaverin capsule consisting of codeine sulfate $\frac{1}{4}$ grain, papaverin hydrochlorid $\frac{1}{4}$ grain. Three of these capsules may be taken as often as every three hours.

Symptomatic relief can be readily obtained from a one per cent solution of cocaine, but helpful as this is, it should rarely be used because of the obvious danger of addiction. Spraying with a 1.5 per cent solution of ephedrin hydrochlorid will relieve

nasal congestion for several hours; also the fumes of benzedrine or menthol are very helpful for relieving stuffiness in the nose and throat and maintaining adequate drainage from the sinuses.

The treatment of influenza is still almost entirely symptomatic, as no specific cure has yet been discovered. The most important part of the treatment is absolute rest in bed until convalescence is well established. Fluids should be forced, about 4000 c.c. daily during the febrile stage. The patient should be on a light diet and alcohol in the form of whisky or brandy can be used for stimulation. The usual remedies should be employed for headache, persistent cough and insomnia. A favorite mixture for inhalation is equal parts of menthol, creosote and chloroform.

The most serious complication of influenza is influenzal pneumonia. This occurs in 5-15 per cent of all influenza patients. The pneumonia may be primarily of virus origin, but nearly always there is a mixed infection with *haemophilus influenzae* and one of the more common pathogenic cocci, such as the pneumococcus, streptococcus or staphylococcus aureus. In influenzal pneumonia the pneumococci present are usually of the higher types. During the epidemic of 1918, a good many of the more serious cases were caused by hemolytic streptococci. Influenzal pneumonia varies from an ordinary mild broncho- or lobar pneumonia to an intense and rapidly fatal hemorrhagic pneumonia accompanied by edema of the lungs. This fulminating form is very alarming and many of the patients in the last epidemic died within twenty-four hours of the onset of the pneumonic symptoms.

The treatment of influenzal pneumonia does not differ essentially from the treatment of pneumonia in general. During the epidemic of 1918 we had only Type I serum with which to combat pneumonia in a specific way. Since then serums for the various types of pneumococci have been developed, but far more important has been the discovery of the sulfonamid drugs as a specific agent for controlling pneumonia of nearly all types. Certainly nearly all pneumococcal and streptococcal pneumonias should be quite amenable to chemotherapy, and probably the occasional staphylococcus and Friedlander pneumonias would respond to some extent to these remarkable agents. In our rather extensive experience with chemotherapeutic agents at Bellevue Hospital, we have reached two rather important conclusions: (1) That sulfadiazine is the least objectionable of all the sulfonamids from the standpoint of toxicity, yet possesses all the curative power of sulfapyridine and sulfathiazole. (2) According to the careful statistical study recently published by Plummer and others from our Bellevue service, the combination of specific serum with

sulfonamids in the treatment of pneumonia has proved no more efficacious than the sulfonamid alone. Theoretically the combination should be more effective, but practically, sulfonamids seem to be able to save nearly all cases that can be saved by any form of treatment.

PROPHYLAXIS

The prevention of the common cold is still an unsolved problem, chiefly because the sanitarian has no way of preventing contact of the patient with crowds. Sprays and gargles are disappointing and irrigations are apt to impair the natural mechanism of elimination. Bacterial vaccines are of limited value, though they seem to give some individuals definite protection. Attempts to immunize against the virus of the common cold have thus far been unsuccessful. In many cases, especially in children, the removal of a focus of infection in the tonsils or sinuses will cause a marked reduction in the number of colds. Exposure to chilling and outdoor hardships is sometimes recommended to increase resistance to colds, though this is probably of limited value. The same applies to ultraviolet radiation and vitamins.

With respect to influenza, isolation, as in the case of the common cold, is a preventive measure of some value, though influenza is so extremely contagious that in times of pandemic, isolation has proved to be a rather impractical procedure.

It has been shown by several investigators that ferrets and mice can be successfully immunized against the experimental disease and that protective antibodies develop in the blood serum of human subjects following the subcutaneous injection of the influenza virus culture.

Immunization against influenza is complicated by the fact that there appear to be more than one type of influenza virus. However, the so-called influenza virus has certainly been responsible for a certain number of recent epidemics. As time goes on, it will probably be shown that a good many epidemics were caused by a different virus. The recovery and identification of influenza A virus from the throat of a patient with influenza can not be accomplished in less than three weeks. Serological tests for antibodies are more quickly carried out, but in either the case of the complement fixation test or the neutralization test, sufficient time must elapse between the onset of the disease and the day on which the convalescent serum is obtained for the production of additional antibodies by patients infected with the virus. This usually requires from ten days to two weeks.

Recently Horsfall and Lennette⁷ have shown that a formalized complex vaccine containing both

influenza A virus and canine distemper virus was effective in the immunization of ferrets against antigenically different strains of the influenza A virus. Such a combination will undoubtedly be tried extensively in vaccinating human beings if an extensive epidemic should break out during the present war, and there is good theoretical evidence that such a vaccine might prove of real practical value in preventing the disease.

The most important problem in this whole question of common colds and particularly influenza is the prevention of complications. There is plenty of evidence to show that patients who return to their routine life and occupation too soon after any kind of a respiratory infection are more prone to complications than those who exercise more patience and wait until they are completely recovered from the infection. During the winter and spring months the noses and throats of most people contain pathogenic bacteria which are quite capable of starting up any kind of secondary infection once the barriers have been lowered by an attack of coryza or influenza. In the prevention of complications we must again depend largely on isolation, that is the protection of an infected individual from his family and friends while his resistance is lowered. We discovered during the last World War that patients with influenza could not be put into a general medical ward without running grave risks of secondary infection, particularly pneumonia. Those of us who worked through the last epidemic were convinced after it was over that many lives could have been saved by complete isolation of soldiers with influenza. Obviously the isolation of so many sick individuals presented serious practical difficulties, but if these could have been overcome, the frightful toll of deaths exacted by the pandemic of 1918 could have been very much lowered.

One question which usually has to be raised in the case of an influenza epidemic would be whether sulfonamid therapy should be applied as a prophylactic agent during the course of clinical influenza. It is now pretty well recognized that the sulfonamids have no specific effect on either the common cold or influenza, and most practitioners are strongly opposed to their use in these infections, feeling that the danger of toxic reactions which accompanies the administration of sulfonamids far outweighs any practical benefit which they might confer on a patient as a protection against complications. This is a problem which will require considerable investigation. For the time being it would seem that the sulfonamid drugs should not be used at all during the course of coryza or influenza, except perhaps in very small doses.

The treatment and control of epidemic sore throat, measles and pertussis are problems which we can not discuss tonight. The treatment of these infections is simple enough, as long as serious complications can be avoided. Here, however, as in the case of influenzal pneumonia, the serious pulmonary complications of streptococcal sore throat, pertussis and measles should be quite amenable to control by modern chemotherapy.

Finally, therefore, we conclude that the physician and the health officer can now approach the problem of epidemic respiratory infections with a considerable degree of confidence and optimism. The situation is far different from that which existed twenty-three years ago during the pandemic of 1918. The terror which prevailed then among doctors and laymen can hardly be realized now. Today, however, we have a promising virus vaccine which may help materially in controlling influenza, as well as sulfonamid therapy, which should be of tremendous aid in the control of the serious complications. Thus, fortunately, we have every reason to face the future with courage

—33 East 61st Street

INSULIN-SHOCK THERAPY—Billings

possibility of an early discharge of the patient. Many years of hospitalization can be saved to the community and persistent treatment may reduce the population of already overflowing mental hospitals to a great extent. What a patient's recovery means to the patient and family we do not need to mention.

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ANURIA AFTER SULFATHIAZINE.—A case is reported in *Proc. of Staff Meetings of Mayo Clinic*, of a man, 33, who after taking 75 to 90 gr. daily, on the 7th day put out only 150 c.c. of urine, and there was 11.4 mg. of the drug to 100 c.c. blood. On the 8th day, when seen by the doctor reporting the case, there was complete anuria, and the drug concentration in the blood was 70 mg. per 100 c.c. Catheters passed to both kidneys dislodged crystals of sulfadiazine. The first urine obtained contained 390 mg. of the drug per 100 c.c. urine. For the 24 hrs. after catheterization the output of urine was 2,000 c.c.

In 1939-1940, at the Mayo Clinic, stag-horn calculi were removed from the kidneys of 54 patients, only one of whom died.

WHEN YOU GO TO NEW YORK

ATTEND A PERFORMANCE of "The New Opera Company" reopening by public demand with "La Vie Parisienne" at the 44th street Theatre, just west of Broadway. The Opera Company was launched recently by a group of public-spirited and musically-minded citizens which is intended to bring opera and ballet to New York and visiting audiences for a modest sum.

GO TO THE BILTMORE THEATRE and see "My Sister Eileen," a very clever comedy concerning the adventures of two young sisters who leave their small home town to make a place for themselves in the Art World of New York City. They find themselves in a Greenwich Village basement apartment. Lots of action and wit which has kept audiences in riotous laughter for over two years.

DON'T MISS "Cuckoos On The Hearth," playing at the Ambassador Theatre, 49th Street West of Broadway. This is a comedy with some very unexpected twists. There are two solutions to the mystery and it's anyone's guess which is the right solution. The medical fraternity is represented in the cast by "Dr. Gordon."

CALL AT THE INVENTION EXHIBIT at the establishment of Z. H. Polachek, 1236 Broadway, corner 31st street. This landmark in New York has been in existence for 16 years. Many doctors have secured patents through this office. There is a wide variety of inventive exhibits collected through the years.

SPEND A FEW HOURS with Mr. Edward T. Hall, Director of the Universal School of Handicrafts, on the 25th floor of the RKO Building at 1260 Sixth Avenue at 50th street. Many doctors use the facilities of this school in the work of occupational therapy. Among some of the fields of creative expression are: Loom Weaving, Sculpture, Block Printing, Painting, Lithography etc.

LEARN HOW MUSIC is being used in hospitals to allay fear and pain. The National Foundation of Musical Therapy, Studio 704 Steinway Building, 113 West 57th street. This Foundation has been established as a non-profit organization for the study and use of Musical Therapy in and out of hospitals.

BE SURE TO RESERVE SEATS for "It Happens On Ice," the big ice-travaganza now in its second year at America's First Ice Theater, THE CENTER THEATRE, Rockefeller Center. Over 1,000,000 people have enjoyed this show, one of the outstanding in New York City. Visitors to Rockefeller Center are now making the big ice show a must among the city's unique attractions.

FOR AN EVENING OF OPERA the visitor to New York City will surely go to the Metropolitan Opera House on Broadway at 40th street. The 1941-42 season will feature "The Magic Flute," a Mozart Opera, "Le Nozze Di Figaro," "Don Giovanni." New scenery and costumes have been designed. A notable cast has been selected. Several guest conductors of international prominence will be introduced this year.

SYPHILIS IN THE TUBERCULOUS

(P. Murphy & L. Bromberg, in *Amer. Rev. Tuberc.*, June)
Syphilis can be treated safely and effectively in tuberculous patients. In a patient suffering from hopelessly advanced tuberculosis, latent syphilis may be disregarded. Syphilis in an individual with tuberculosis which gives promise of being controlled should be treated. Late types of syphilis, notably cardiovascular and cerebrospinal, may be debilitating and even fatal in a patient with advanced lesions of tuberculosis. It is a mistake, however, to upset a satisfactory equilibrium in a tuberculous patient by drastic antisyphilitic treatment.

Gout and the Negro

ABRAHAM COHEN, M.D., Philadelphia

From the Arthritis Clinics of the Philadelphia General Hospital and the Jefferson Medical College Hospital

IN A REVIEW of the literature, little mention is found of gout in the negro. Futcher's report¹ in 1904 on 59 cases indicates that three were of some race other than the white and since his report came from cases seen in Baltimore it is to be assumed that these were negroes.

In 1937 Burman reported² a case of gout in a negro. On another occasion the author of this paper reported such a case.³ Since so few cases of this disease in this race are reported, it is to be assumed that the disease is either rare in the black race or, as is the case in members of the white race, it is often misdiagnosed. While it may not be so common in the colored as it is in the white race, the fact remains that it does exist and that the question of heredity seems to be a factor to be considered. A family history beyond this generation appears to be negative from the knowledge of the patients.

Case 1.—Negro man, born in South Carolina in 1914, had ordinary diseases of childhood and a family medical history irrelevant except that a younger brother has gout.

The onset of present illness dates back to when he was twelve years of age. At this age he would awaken during the night with stiffness and swelling in the right knee. This lasted for a week, was not accompanied by pain, did not confine him to bed, and he made a complete recovery. A year later, he was awakened one night by severe pain in the right knee and found the joint swollen. The pain and swelling lasted for ten days, were confined to the knee, and did not keep the patient in bed. He again made a complete recovery. The patient was residing in the country in South Carolina. The family was poor and could afford only an ordinary diet. The patient ate sparingly of proteins, was not a drinker of alcohol.

About two years later, while at work one morning he noticed swelling in the right great toe and left ankle. Soon there were redness, heat and severe pain. A few days later the right knee became involved and the patient was forced to bed for the first time. Here he remained, unattended by a physician for two weeks. The condition remained in the left ankle, right great toe and right knee, until convalescence. A good recovery was made without residual signs or symptoms and no further difficulty was experienced until 6 years later at the age of 22 when, while at work, pain and swelling developed suddenly in the right metacarpo-phalangeal joint. This attack was very painful and lasted for one week. The following week the right elbow became involved similarly. This was followed by involvement of the left great toe, right ankle and right knee. All joints were red, hot, swollen and extremely painful. Three weeks were spent in the hospital where treatment was given for arthritis.

There were ten more visits to the hospital and in this fever-therapy, baking and massage—as well as the other fever therapy, baking and massage—as well as the other forms of therapy ordinarily prescribed for arthritis were given trial. The longest stay in the hospital was 19 days, the shortest 7 days.

Examination: A negro man, 5 ft. 9 in. tall, weighs 141 lbs.; eyes, nose, throat and teeth negative; ears negative except for tophi; heart, lungs and abdomen are negative.

A large tophus is found at first right metacarpo-phalangeal joint and a small one on the palmar surface at the distal joint of the corresponding finger.

There is considerable enlargement of the right knee, particularly on the medial aspect.

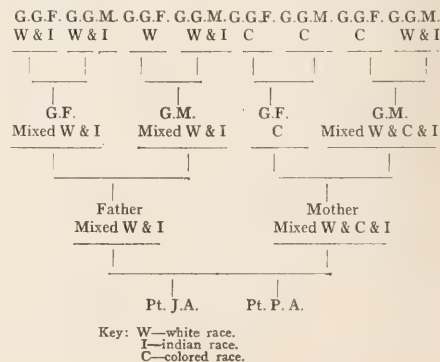
Course: For the past year this patient has been under the supervision of the arthritis clinic at the Philadelphia General Hospital. He has had four minor attacks of gout. The longest lasted three days, while the shortest was overnight. His blood uric acid (serum) ranges between 6.5 and 9.3 mgms. per cent. He admits indiscretions in his habits just prior to an attack. He contends that if he were not "so weak" in his habits he probably would have no attacks. He is invariably relieved by colchicin, gr. 1/60 q. 4 h.

Case 2.—Negro boy, aged 16 years, born in South Carolina. He had the ordinary diseases of childhood. One other brother has tophaceous gout. At the age of 12 one night he was suddenly awakened with severe pain in the left heel. In the morning there was swelling along the Achilles tendon accompanied by pain. The attack lasted about two weeks and was confined to the heel. He made a good recovery without residual signs or symptoms.

Two years later at the age of 14, he was again awakened in the night with pain, swelling and extreme tenderness in the left great toe. This time the attack lasted a week and was confined to this toe.

The third and final attack came on at the age of 16 and the right great toe and left ankle were involved. The patient was confined to bed for ten days. There was swelling, redness and severe pain particularly at night. At the end of ten days recovery was complete except for residual swelling, but no pain or tenderness in the right great toe. **Examination:** A negro boy 16 years of age, weight 118 lbs., height 5 ft. 3 in. His blood uric acid (serum) is 6.1 mgms. per cent. X-ray examination of the left great toe shows a punched-out area at the left first metatarsophalangeal joint.

The following table represents the genealogy for three generations as obtained from the family bible:



This table reflects the possibility that these patients may have inherited their gouty diathesis from the white race. However, it may well be that many of our negro brothers have the same mixture of blood and therefore it becomes increasingly necessary to be on the lookout regardless of color.

SUMMARY AND CONCLUSIONS

1. Gout is supposedly rare in the negro race.
2. Two cases (of brothers) are herewith reported.
3. The genealogy of the patients is presented.

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- 2106 Spruce Street

A CRITICAL ANALYSIS OF A SERIES OF APPENDECTOMIES

(Zachary Sagal & Walter Heinemann, New York, in *Dig. of Treat.*, Dec.)

An analytic study of 387 appendectomized patients among 3,460 clinic admissions has been conducted in our private practice and with patients at the New York Post-Graduate Clinic, the latter covering a period of 8 years.

Removing the appendix for the cure of gastro-intestinal conditions, except acute and recurrent appendicitis has proved futile. Cases diagnosed as chronic appendicitis constitute a diagnostic error in every instance. Usually it means either insufficient study of the case or incorrect interpretation of the findings. In many cases it is merely an escape due to unsatisfactory management of a case and inability to obtain results.

Asymptomatic appendices very often show the same histologic picture as the presumably diseased ones.

As pathognomonic of so-called chronic appendicitis, pain and tenderness in the right lower quadrant of the abdomen comes closest, but this symptom is present in sundry other conditions and in many appendectomized patients—in 20 per cent of our series. In every case in our series in which the diagnosis of chronic appendicitis might have been considered, careful study revealed some other condition which we thought more likely to be responsible for the patient's complaints, and we treated it accordingly.

Röntgenologists generally attach a good deal of importance to tenderness on palpation under the fluoroscope, to fixation, to the presence of fecaliths, to unduly long retention of barium. Many clinicians and röntgenologists disclaim the significance of any and all of these findings.

There is not much objection in the literature or in our experience to surgery for recurrent appendicitis. When a history of one or more fairly typical attacks of acute appendicitis is obtainable, the predominating number of writers on the subject believe that the appendix should be removed.

The fact that many appendectomized patients are subsequently found to be suffering from peptic ulcer, gall-bladder disease, colitis, genito-urinary disease, pelvic and sundry other diseases made many wonder whether the conditions were not previously overlooked, though present. We believe that cases diagnosed chronic appendicitis constitute a diagnostic error in every instance.

A Postcard Request of the Author will bring a Reprint.

URINARY INCONTINENCE OF FIFTEEN YEARS' DURATION IN A TABETIC PATIENT RELIEVED BY TRANSURETHRAL RESECTION

(J. L. Emmett, from *Prof. Staff Meetings The Mayo Clinic*, Nov. 12th)

Last September a man, 66, came to the Clinic who for 15 years had found it necessary to wear a rubber urinal because of urinary incontinence. Three weeks before his coming the dribbling had ceased entirely, and he had been obliged to empty his bladder t.i.d. by means of a catheter. He has complained of fleeting sharp pains across his abdomen and thorax for a few months.

On questioning it was found that it was not a constant dripping of urine, but involuntary urination at irregular intervals. The flow of urine had never been free, and the patient felt that he had never emptied his bladder completely.

The patient had had gonorrhea as a youth, but no syphilitic lesion had been recognized.

B. p. was 176/94, no enlargement of the prostate gland, Argyll Robertson pupils, a marked delay in sensation of pain over the lower extremities and over the anterior surface of the chest, questionable Romberg's sign.

Tests of the blood were negative. Spinal fluid negative.

On the basis of the neurologic observations and the typical "spot" pains, a diagnosis of *tabes dorsalis* was made.

Cystoscopic examination under local anesthesia disclosed moderate relaxation of internal and the external sphincter muscles. In the bladder were trabeculae of large caliber. No definite obstruction of the neck of the bladder was apparent. Because of our experience with this type of condition cystoscopy under anesthesia was done, to see whether or not during the procedure tissue which might be causing moderate obstruction could be removed from the vesical neck, in some cases obstructing tissue may not be apparent until resection actually is in progress.

After intravenous administration of pentothal sodium it was found that the urethra in the region of the penoscrotal angle could not be dilated to admit no. 27 French or a no. 30 French Thompson resectoscope. The cause of this narrowing apparently was a stricture of larger caliber resulting from the gonorrhea in early life, as previously mentioned. A no. 24 French Braasch-Bumpus resectoscope was passed easily. On close inspection there was a slight enlargement of all three lobes of the prostate. As resection proceeded, this enlargement became more apparent and 8 gm. of adenomatous tissue were removed, which left the fibers of the prostatic capsule exposed in the entire circumference.

When dismissed from the Clinic two weeks after operation he was voiding a normal urinary stream, his urinary control was perfect, he was emptying his bladder completely and was finding it necessary to void only once during the night.

PROTECT GASTRO-INTESTINAL MUCOSA WHEN GIVING SULFAPYRIDINE

(S. D. Maiden, Council Bluffs, in *Jl. Iowa Med. Soc.*, Oct.)

Sulfapyridine should be tried in all streptococcal infections which do not promptly respond to sulfanilamide, neoprontosil or sulfathiazole therapy. The gastric mucosa membrane should be protected when sulfapyridine is used whenever possible by solid foods and ample fluids. Where such protection can not be given, intravenous therapy should be resorted to, using sufficient dilution and administering such dilutions slowly so as not to obliterate the lumen of the vein.

A Postcard Request of the Author will bring a Reprint.

Effective Therapy in Chronic Alcoholism*

THOMAS B. MITCHELL, M.D., Shelby, North Carolina

THIS is in no sense an original paper. It discusses means used by others, and is presented in the hope of bringing to the attention of the medical profession a practical, and I believe a successful, method of dealing with alcoholism. These conditions are problems that the family physician is frequently faced with, and after the acute medical phase or period of hospitalization has passed, some form of moral psychological support is essential to the individuals' permanent cure. "There is a great deal more to the understanding and successful treatment of alcohol addiction than can be found either in drugs or in the usual methods employed in sanatoriums or other havens of refuge." Custodial or protective care is very inadequate preparation for that which lies ahead. Usually the fundamental alcoholic habit is left untouched and, unless some definite practical moral therapy is instituted, the patient is left defenseless on his return to his usual environment.

We have reference to the true alcoholic, rather than to the occasional spreer or even hard-drinker; to that numerous group in which there is an underlying disease that expresses itself in pathological drinking. The psychology of this group is fairly well understood. We know that the making of an alcoholic reaches far back through adolescence and childhood to heredity, recent and remote. "The frequency of its occurrence among only sons or younger sons gives us a key, and we find that the unfortunate combination of parental spoiling and dominance makes for a pattern of emotional immaturity that furnishes a ripe soil for dangerous alcoholic indulgence later in life."

The normally controlled user of alcohol drinks to exaggerate reality, because he finds reality enjoyable; and only on this plane, where it acts as a social lubricant and promotes conviviality, is there any defense for its use. In contrast to this, the true alcoholic finds ordinary reality so unpleasant, in some cases unendurable, that he must find a retreat or a defense from it; and in alcohol he finds an escape from the responsibility and burden of mature emotional life and its decisions. What is not always realized is that the true alcoholic is a very sick person, and of a disease which up to the present time our profession has failed to solve or to cope with.

Some idea of the frequency of this condition and of the economic and social damage caused by it may be gained if one recalls the number of his

friends and acquaintances whose use of drink has caused grave social impairment in the person and in the family. While the success of psychiatrists in effecting cures has been considerable, their non-availability to the ordinary individual discourages hope that any great progress can be had from them. Their efforts are along the lines of reëducation. In a period lasting months or years they try to accomplish a gradual maturing process, the treatment successfully terminating, not in a rebellion at reality, but in an adjustment that makes for confidence and a feeling of justifiable independence. This is largely accomplished by getting the patient to retrace his life course, and certain changes, both great and small, are advised that make for the emotional adjustment that was passed over during formative years. In addition to the small number cured by these methods, there has been from time immemorial the occurrence of emotional cures from strong religious stimuli. This occurs when a man makes a contact with some power that is revered or feared and thereafter the course of his life becomes permanently changed. These recoveries have been sporadic and possibly insufficient in number and impressiveness to make headway with the alcoholic problem as a whole or to impress scientific men that the cure may be simple and without complicated psychological procedures and that all the tools are at hand.

I think all psychiatrists and all other observers are certain that a man is never permanently cured of these abnormal states until there is a personality change and the object of this discussion is to relate briefly a practical and promising method of effecting such a change in an individual. The ideas incorporated in the following methods were originated and applied by a small group of alcoholics, who found that they were successful with themselves; and within a few years there has been sufficient evidence of the success of their approach to alcoholism that it merits the attention of all medical men. Perhaps some of you read in the March 1st issue of the *Saturday Evening Post* an article entitled "Alcoholics Anonymous," which gave an unbiased laymen's review of the growth of this movement up to that time. The central idea is that of a fellowship of ex-alcoholic men and women who have been cured by the application of certain principles and who are banded together for mutual help. Their approach to alcoholism is based squarely on their own drinking experience, what

*Presented to The Thermal Belt (N. C.) Medical Society meeting at Shelby, October 16th.

they have learned from medicine and psychiatry and upon certain spiritual principles that are common to all creeds.

As set forth in that article, their methods are simple and have proved successful—as they constitute good medicine, good psychology and good religion. They recommend that a person who honestly desires to be free from his alcoholic habit do certain things that will lead to a spiritual experience; and, as soon as these steps are undertaken, it is further urged that the patient begin work with other alcoholics as a means of perfecting his own cure. This is not entirely from a sense of duty, but rather for self-preservation and certainly in the early stages unless they spend time in helping others to health they can not remain sober themselves. A basis of understanding and friendliness is first established; and, because of the ability of one alcoholic to gain the confidence of another, almost impossible of attainment by an outsider, there is little chance of that rationalization and mental camouflage which all alcoholics indulge in.

Once the patient admits he is powerless to control his drinking habits he is told that there is a remedy for his condition, and that, outside of this course so far as they know, there is no hope for him. This becomes convincing to the prospective patient when former alcoholics can cite their own cases and prove the results, and if he honestly desires relief, he is put in a rather embarrassing situation unless he is willing to go further. It is suggested he accept and apply a simple religious proposal and very frequently he accepts.

The first and essential step is that he become willing to and does turn his life over to the care and direction of his Creator. When this is sincerely done, and the further suggested steps are carried out, he undergoes the profound mental and emotional change common to religious experience. No effort is made to convert him to any particular faith or creed and no emotionalism or aggressive evangelism is exhibited. The succeeding recommendations are that he make a careful inventory of himself and discuss confidentially his findings with some competent person whom he trusts. He is then advised to begin at once an honest effort to adjust all bad personal relationships and to rectify his life in so far as it is possible without hurting innocent people. The fellowship endeavors to guide and help the patient in his efforts and when this is consummated there comes into the patient's life a spiritual experience which is the foundation upon which his cure is built. Its permanency depends only upon his willingness to remain spiritually alive and this he does through prayer and meditation to improve his conscious contact with God as he understands Him, praying for knowledge of His will and power to carry it out. This relationship

is also maintained by his willingness to work with other alcoholics and to carry this message to them and to try to practice these principles in all his affairs.

This seems quite like an impossibility but in essence it means only the willingness to grow along spiritual lines and the permanency of the cure depends on this attitude. There is always, in a successful case, a radical change in attitude and habits of thought, sometimes with amazing rapidity. His hope and imagination are fired by the opportunity of fellowship with other ex-alcoholics who have as a primary object the saving of lives and homes of those who have suffered as he has suffered. The fellowship is maintained by a loose organization, without dues or officers. A regular weekly meeting is held which each member attends whenever it is possible.

These methods in no wise minimize the place of the physician or institutional care. Most will agree that practical psychology needs to be applied, with the further essential element of a spiritual experience and revitalization. My own feeling is that there can be no real adjustment in the moral realm until there is an adjustment in the spiritual realm. The basic promise of Scriptural philosophy and psychology is that man is lost and alienated from God, the source of goodness and truth, and unless this fundamental fact is spiritually apprehended there can be no philosophy or psychology that is properly oriented or basically true.

It may be too early to say that this is the complete answer to alcoholism and certainly some physicians will disagree.

At the present time there are approximately 4000 members of this organization, Alcoholics Anonymous, scattered largely over the middle west and eastern seaboard. They hope to extend their work to all parts of the country and to make their methods and answers known to every alcoholic who wishes to recover. They have prepared a book called *Alcoholics Anonymous*, which sets forth their methods and experience with clarity and force. Certainly not for all alcoholics who are introduced to these methods is a cure effected, and while no definite statistics are yet available, apparently a cure is completed, or the basis laid for a permanent cure, in half of these cases with which an active organization has an opportunity to work. These are two essentials to its success, a capacity to be honest and a genuine desire to do without beverage alcohol. This work is in its infancy but there seems every reason for our profession to give encouragement to methods that are as promising as are these.

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CASE REPORT

PRIMARY TUBERCULOUS PERICARDITIS

G. C. DALE, M.D., Goldsboro, N. C.

A NEGRO MAN, 44 years of age, was admitted to the hospital on November 30th, 1938, complaining of shortness of breath and marked weakness. He was well until July of 1938, when he had what was diagnosed as an acute attack of malaria. He was sick throughout the month of July, after which he returned to work. Two or three weeks later he began to have headache and cough. This was followed by dyspnea and weakness and later by heart consciousness and general malaise. The appetite was poor. Bowels moved regularly. He had lost twenty pounds in the last three weeks. There had been no expectoration with the cough. Kidney output had been scant. His nights had been sleepless. There was no history of pleurisy or fistula; nor of venereal disease, acute infections, nor any other illness.

His father died of a stroke at the age of 62. His mother died young of unknown cause. His wife was living and well. There was one child living and well. There had been no miscarriages. His occupation was painter and farmer.

Physical Examination: The patient was in much distress because of dyspnea, coughing at intervals. He had the pallor of anemia and marked tremor of the hands. Pupils were normal in reaction. Nose and throat were negative. Teeth and gums were in fair condition. Tongue was coated and tremulous. The chest on inspection gave the impression of being fuller anteriorly on the left side and expansion was impaired on the left. No rales were heard in either lung, but in the left, near the hilum posteriorly, there was a small area over which definite tubular breathing could be heard. There was no impairment posteriorly to percussion. Heart dullness area was pyriform, enlarged to the left as far as the anterior axillary line. The apical impulse, however, was just inside the nipple line and in the fifth interspace. The heart sounds were somewhat faint, although of fair volume at the apex. There were no murmurs and no arrhythmias. There was a pericardial friction rub near the sternum in the left fourth interspace. The abdomen presented moderate tenderness over the liver on the right side, but the liver could not be felt. No other masses were palpable in the abdomen. Reflexes were normal. Romberg sign was negative. There were marked tremors of the hands and moderate edema of the ankles. The blood-pressure was 104/76, pulse 104, temperature 102.2. A tuberculin test showed a 2-plus reaction. Circulation time was

as follows: Arm-to-tongue with 20-per cent calcium gluconate 18 seconds; arm-to-lung with five minims each of ether and sodium chloride, eight seconds. The venous pressure was 26 millimeters.

Laboratory Findings: Urine—Sp. gr. 1022, trace of albumin, acid, four to nine pus cells per high-power field, an occasional r.b.c. Blood—Wasserman negative; white b.c. 5,700—poly 75, lymph 21, mono. 4; hemoglobin 82%; r.b.c. 4,200,000. No malaria organism was seen.

Sputum examinations did not show any tubercle bacilli.

A fluoroscopic examination done at the first visit showed a heart shadow much enlarged, extending to the costal margin on the left and well beyond the spine on the right. The pericardium was of the pear-shaped form suggestive of pericarditis, but the outline fibrillation seen in fluid-filled pericardia was absent. The aorta was slightly enlarged at the arch. Nothing of significance was seen in either lung field. The diagnosis by the röntgenologist at that time was pericarditis with effusion, probably of tuberculous origin.

A flat plate of the chest and heart on admission showed no evidence of tuberculosis, past or present. Appearance of the heart was the same as on fluoroscopic examination.

An electrocardiogram revealed a rate of 100, with regular rhythm. There was slurring of the QRS complexes, more marked in lead 1. There was moderate left-axis deviation. Negative T waves were present in all leads except 3, where they were isoelectric. There was a tendency to low voltage.

On December 6th, 1938, 750 c.c. of bloody fluid was removed from the pericardial sac. In the fluid were many lymphocytes, a few polymorphonuclears and many red blood cells. The sediment was negative for tubercle bacilli. The patient was running an irregular temperature, from 97 to 102. He felt greatly relieved by the aspiration. A guinea pig was not available and inoculation with the pericardial fluid was not done.

Two weeks later, 300 c.c. of darker bloody fluid were removed. At this time the patient's leukocyte count was 4,900, the pericardial fluid contained numerous lymphocytes, a few polymorphonuclears and some red blood cells, and was negative for tubercle bacilli.

Five weeks after the first tapping, 300 c.c. of pericardial fluid was removed which showed many leukocytes and red blood cells, a few mixed organisms, no tubercle bacilli. At this time, the liver was palpable; there was edema of the chest wall and the legs; dyspnea was marked. Digitalis was given.

On January 25th, 700 c.c. of straw-colored fluid was removed from the pericardial sac. The patient had lost a great deal of weight by this time, and dyspnea was more severe, as was edema of the feet. An electrocardiogram done after the tapping revealed a low amplitude of QRS complexes, inversion of T waves in all leads, and left-axis deviation.

On February 20th, the patient was readmitted to the hospital for pericardial aspiration, which yielded only some 10 c.c. of straw-colored fluid. The patient had all evidences of congestive failure and two nights later he expired suddenly.

Permission for autopsy was given only for the examination of the heart. The left chest was opened by removing a section of wall eight cm. wide from the second to the seventh rib. The pleural cavity was completely filled with a straw-colored fluid and the lung was collapsed. There were several long, white, fibrinous strings radiating from the pleura. The pericardium was covered with a thick pink exudate, which covered both the inner and outer surfaces, and the sac contained 100 c.c. of sero-sanguinous fluid.

The pericardium was 1 cm. thick and inelastic. The heart itself was also covered with a thick, pink, fatty-fibrinous exudate and was only slightly enlarged. The heart was removed but was not weighed. The tricuspid valve was normal, but the mitral presented several small, firm shot-like nodules.

The heart and a section of the pericardium were sent to Dr. C. C. Carpenter of Wake Forest for microscopical study. A gross clinical diagnosis was recorded as a tuberculous pericarditis.

Microscopic pathological report by Dr. Carpenter was as follows: Sections show a sero-fibrinous exudate on the surface of the myocardium. There is an infiltration of mononuclear cells and typical foreign-body giant cells are present. Mononuclear cells are present which resemble epithelioid cells. Diagnosis: Tuberculous pericarditis.

Discussion: Our medical teachers had taught that tuberculous pericarditis is usually, if not always, secondary to tuberculosis elsewhere in the body. This case, both by the history and physical manifestations, seemed to be one of the primary type. A few months after the death of this patient, we had the opportunity to review this case with Dr. Torrey of Philadelphia, and it was his opinion that this case was one of the primary type. He stated, too, that he had among his records over a period of many years, ten or a dozen cases which he felt were of primary tuberculous pericarditis.

This man, having no history of acute infections or rheumatic disease and requiring repeated aspirations of pericardial fluid, could practically be ruled

out as having pericarditis of rheumatic origin. The leukopenia and the abundance of lymphocytes in the pericardial fluid would also be against pericarditis of rheumatic origin.

It is interesting to attempt to explain this patient's low venous pressure when first seen. Moderate decompensation and cardiac dilatation had to be considered. The minor liver engorgement and the presence of edema of the legs, in the absence of renal disease and any marked anemia, would seem to indicate that the right side of the heart was holding up fairly well in comparison with the left. To some extent this fact might prevent a high venous pressure, which one would expect in congestive failure. This explanation would seem unlikely in view of the knowledge that the heart was compressed by an effusion and therefore could not undergo dilatation. The most plausible explanation of the venous hypopressure seems to be found in peripheral relaxation of the vascular system, toxic in origin.

The typical electrocardiographic findings ordinarily seen in acute pericarditis—high take-off of the ST segment in all leads with exaggerated T waves—would not appear in tuberculous pericarditis. The QT interval in this case was normal or reduced—the opposite of what occurs in cardiac dilatation.

The origin of this tuberculous process was probably in the mediastinal lymph-nodes. This was not demonstrated in our patient.

CORNEAL INJURIES AND COMPLICATIONS

(W. W. Mall, Ponca City, in *Jl. Okla. Med. Assn.*, Oct.)

In all injuries my first step is instillation of ½% pontocaine for anesthesia. In simple surface erosion, the diagnosis is made simple by the instillation of fluorescein stain, which will very definitely outline the extent of injury.

Clean-cut perforations will often heal without intervention. In a gaping wound a corneal suture may be necessary. Thorough examination should be made for a foreign body lodged within the eyeball and if found it (or they) should be removed in almost all cases. Cleanliness and symptomatic treatment should be carefully instituted, beginning signs of complications closely watched and controlled if possible. In severe damage to the eye, where useful vision has been destroyed, surgical removal is indicated for prevention of sympathetic ophthalmia.

Foreign bodies are most easily found with a loupe and indirect light through a magnifying glass. A rather blunt eye spud should be used for removing the foreign bodies. In deep seated foreign bodies a rust stain often remains after the foreign body is removed, this should also be removed with some type of burr, well irrigated with boric acid and medication instilled. As a rule a loose bandage should be applied for a few hours, and the patient instructed to return to the office the following day if any discomfort remains in the eye.

CARCINOMA OF THE LARYNX IS INCREASING; 82% OF EARLY INTRINSIC CASES ARE CURABLE. Hoarseness in an adult calls for immediate laryngeal examination; it might be a carcinoma.—Tracewell.

CLINIC

Conducted By

FREDERICK R. TAYLOR, B.S., M.D., F.A.C.P.

A 34-year-old accountant consulted me on Nov. 10th, 1931, complaining of difficult urination and nervous depression. He stated that 12 years previously, the day after coming back from military service in the First World War, he was in a serious automobile wreck and injured his back, fracturing two vertebrae. On being shown a picture of a spine, he thought, from his recollection of the x-ray film, that the transverse processes had been the sites of the fractures. The injury paralyzed him from his waist down and he was catheterized for 3½ months. He did not lose control of his bowels, though he was severely constipated. He was treated for his injury by a competent surgeon in Asheville. He got out of the hospital and went for a year without further treatment, but was troubled greatly by nocturia (6 to 10) and a foul odor to his urine, so consulted an Asheville urologist, who gave him bladder irrigations for a year, weekly at first, then monthly. Then he moved to High Point. The Asheville urologist had advised him to consult the Crowell Clinic in Charlotte after leaving Asheville, but he did not do this at once, but had treatment from a couple of High Point physicians. Then he did go to the Crowell Clinic and improved a lot. He kept going back for treatment every two or three months until about a year before consulting me. Then he went to the Veterans' Bureau at Charlotte and was sent to Oteen for observation. At Oteen he was examined thoroughly, but given no advice other than to work shorter hours, exercise more etc.—things he could not readily do. He was also sent to a surgeon who did not advise any operation. A röntgenologist at Oteen raised the question of Pott's disease, but the final diagnosis obviously was not that, as exercise was advised and no mechanical fixation employed. The problem of marriage arising, he returned to the Crowell Clinic to try to get completely cured. A urologist there who was thoroughly conversant with his condition touched up his verumontanum with silver nitrate and told him to go ahead and marry. He had had satisfactory erections up until 5 or 6 mos. before consulting me, but not after that time. He had not yet married. He had felt that for the past 2 or 3 months he had been getting less benefit from his treatment than formerly. He then went to Duke, where, after thorough examination, the patient says he was told he could be cured; but he got no better. For two months before coming to me he had been treated further with irrigations by a High Point physician. The only other items of interest in his personal history were a tendency to stringy or

pencil-like stools and rather marked constipation. His habits and past history were not contributory. His family history threw no light on his trouble.

Physical examination showed normal findings in every respect except for the following: The spinous processes of his last thoracic and first lumbar vertebrae were abnormally prominent. This was the site of his old injury. There was no transmitted tenderness on jarring his head with his neck held rigid. Abdominal palpation gave a sensation of slight thickening of the bladder wall. He was somewhat tender over the *left* kidney, but *not over the right*, posteriorly. Examination of the genitals was negative. Rectal examination showed no hemorrhoids, the prostate was neither enlarged nor tender, but what was probably a thickened bladder wall could be felt quite definitely through the rectum. His feet were not examined. He said he had mild athlete's foot, but not enough to bother with. His kneejerks were absent. He says they were present up to the time of his injury, but have been absent since. He showed no Romberg sign, his coördination was good and his gait seemed perfectly normal. There was no paralysis of his lower extremities. His urine showed some albumin and was loaded with pus, but otherwise was negative. He had been taking methenamine and ammonium chloride prescribed at Duke for four weeks. He was tried on niazol, a pyridium-like dye put out by Schering and Glatz, and seemed to improve for a very short time, but then got as bad as ever. Increasing the dose of niazol then reduced the pus in the urine very markedly. His prostatic fluid was loaded with pus, although there was no prostatic tenderness or enlargement on rectal palpation. This gradually cleared up until his cystitis did not bother him.

He returned to me in April, 1934, saying that he had gone back to Duke and they had found his same old trouble. He felt it too costly in time to keep going to Duke for treatment, so I referred him to Dr. E. A. Sumner, who treated him with satisfactory results.

My next note on his case is dated March 28th, 1935. At this time he complained of pain in his right inguinal region. He had noted no bladder irritation. He had been going to Dr. Sumner about every 2 weeks for treatment, but this had come on rather suddenly since his last visit to Dr. Sumner. His temperature was 98.4, pulse rate 88 and respiratory rate normal. He had no nausea and vomiting, and no hernia. He had a tender area starting an inch below McBurney's point and extending down to Poupart's ligament. He said that his pain had begun as generalized pain and had later localized in the area described. Dr. Sumner, called in consultation, demonstrated that the maximum ten-

derness was in the vas deferens and feared infection going from the bladder to the epididymis. The urine still contained pus. Recovery from inguinal pain was made in two days on Dr. Sumner's treatment, without going to the hospital. He married and his wife has had a fine baby.

Diagnosis: Spinal cord trauma with "cord bladder." Complicating chronic cystitis and acute deferentitis.

Discussion: At the time of his injury, constant catheterization of a cord bladder was the accepted standard treatment. In more recent times the trend has been to keep out of an uninfected paralyzed bladder, because it seems practically certain that continued catheterization, even with the most meticulous care to insure asepsis, will infect the bladder and necessitate prolonged, even life-long treatment. It is recognized that if the bladder be left alone, while it will become greatly distended and for a time there may be incontinence of retention, it will eventually develop its own automatic rhythmicity, when freed from spinal control. In 1919, however, before this became recognized, it would have been considered gross negligence not to have catheterized him. Medicine marches on!

POSTGRADUATE COURSES IN OBSTETRICS

Five postgraduate courses in obstetrics, each of four weeks' duration, will be offered at the Chicago Lying-in Hospital between January 12th and June 6th, 1942. These are sponsored by the Illinois State Department of Health and the Children's Bureau of the U. S. Department of Labor. The features of the program consist of observations on current managements of normal and abnormal states of the pregnant, the parturient and the puerperal patient. Lectures, demonstrations, clinics and other teaching means augment the operating-room and birth-room observations, and ward-round discourses. The course is run on a non-profit basis. A deposit of \$25.00 is required on registration, \$10.00 of which is refunded at the completion of the course. All the members of the department participate in giving the courses. Additional information and application blanks may be obtained by request from

POSTGRADUATE COURSE, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY, 5848 DREXEL AVENUE, CHICAGO.

UROLOGY AWARD: The American Urological Association offers an annual award not to exceed \$500.00 for an essay (or essays) on the result of some specific Clinical or Laboratory Research in Urology. The amount of the prize is based on the merits of the work presented; if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

Essays must be in the hands of the Secretary, *Dr. Clyde L. Deming, 789 Howard Avenue, New Haven, Conn.,* on or before April 1st, 1942.

SURGICAL OBSERVATIONS

OF THE STAFF
DAVIS HOSPITAL
Statesville

THE USE OF SULFATHIAZOLE IN SUPPURATIVE APPENDICITIS

FOR YEARS we have had almost no deaths even in the worse suppurative cases of appendicitis. We attribute this to the fact that, in addition to the surgical procedure and the earliest possible operation, we have used x-ray treatment over the involved area immediately after operations and sometimes on each of three successive days after operation, with the idea of preventing the growth and development of gas-bacillus infection. In addition, we have given combined tetanus and gas-bacillus antitoxin in these cases.

Now, in addition to these two measures, we often use sulfanilamide in the suppurative areas before the abdomen is closed and as soon as possible give sulfathiazole by mouth.

It is likely that sulfanilamide is the best drug to use for local application in suppurative conditions, or where there is severe infection, and that sulfathiazole is the most satisfactory drug to use orally.

With the rapid development of the sulfonamides we hope that we will soon have a drug that may be administered freely intravenously without causing any unfavorable reaction and, at the same time, a drug which will be more powerful than the present sulfonamides in destroying pathogenic organisms in the body. An entirely new field has been opened up in the past few years and it is our hope that this will rapidly develop to the point where almost any specific infection may be rapidly and easily destroyed by the use of these drugs.

Another important thing that must never be forgotten is the fact that the patient must have plenty of fluids but, at the same time, we must remember that the patient must have blood and where large amounts of fluids are given intravenously the fact that many of these patients should have repeated blood transfusions also. Repeated transfusions of blood are powerful factors in the saving of lives in desperately-ill patients.

The most meticulous care and attention to the minutest detail of the treatment, from the very beginning until the patient is well, and eternal vigilance are required in reducing and maintaining the mortality in surgery to the minimum.

THE IMPORTANCE OF THE PRE- AND POST-OPERATIVE CARE OF PATIENTS

IN THE PUBLIC MIND, the performance of an operation is practically the whole problem in surgery; but as every real surgeon knows the care before and after operation is in many cases just as important, in some even more so.

An accurate diagnosis, proper preoperative care, the correct operation, and proper care throughout convalescence reduces the mortality in surgery to a minimum and gives the highest percentage of good results.

The best of judgment is essential. No matter how skillful an operator may be, unless he has good judgment the mortality rate will be higher and the end-results poorer. The fact that a patient survives an operation is no criterion of a good surgeon. It is the good result that counts. The object of any therapy is to restore the patient to as near perfect health as possible and unless we do our utmost to accomplish this the main idea in surgery is lost.

Even with the best of treatment the results sometimes are disappointing, yet constant attention to details in everything that has to do with the patient's welfare, from the time the patient enters the hospital until he is entirely well and strong again, is of vital importance to that patient.

Everyone knows the patient must have plenty of fluids and for this purpose we usually give glucose intravenously in sufficient amounts until the patient can take enough fluid by mouth. Meantime the patient may require a lot of other things. Blood transfusions are often indicated even when the blood count is fairly normal, and there is no question but that they are often life-saving, even in cases where there is no particular anemia.

Proper diet, proper elimination and extra vitamins, when necessary, all have an important bearing on a patient's welfare and progress. A cheerful, optimistic patient with the determination to get well will often recover, where a fretful, pessimistic patient may succumb. Much can be done to assist a patient in maintaining the proper frame of mind.

Faith in the doctor, in the nurses and in the institution is a powerful factor in a patient's recovery. A sympathetic understanding of a patient is essential. Patients are quick to sense the doctor's interest and sincerity. When a doctor is doing his best for his patients and has the patients' confidence, respect and coöperation, we have a situation which will bring most through their serious illness.

These are just a few of the multitude of things that have to do with a patient's recovery and the doctor who keeps these things in mind, maintains the highest principles and observes the best tradi-

tions of our profession, finds a joy in his work and a satisfaction not to be described in words.

THE IMPORTANCE OF TREATING ANEMIA BEFORE AND AFTER OPERATION

MANY PATIENTS who come in for surgical treatment have an anemia which, while it is not particularly bad—3,500,000 red cells, with a hemoglobin of 72 per cent or so—may profoundly influence recovery. As a sort of rough-and-ready rule, it may be said that a patient with a hemoglobin of 72 per cent has 72 per cent of the recuperative powers of the individual who has a normal count and hemoglobin. Naturally a person with a lowered hemoglobin and red cell count would be at a disadvantage when the body is placed in an unusual strain, especially when this occurs suddenly as in the case of acute illness requiring immediate surgery.

When an individual's blood is below normal, it is just like an army who is inferior in numbers and equipment to an opposing army. If there is not time to build up the patient's blood before operation, it is important to give one or two blood transfusions after operation—until the anemia is overcome. Where there is plenty of time before operation and the anemia is not very marked, iron, liver extract and a rich diet will usually correct the condition promptly.

Careful attention to the study of the patient generally and not overlooking the blood picture should be an important part in the examination of every patient and especially before surgery.

THE INCIDENCE OF UNDULANT FEVER

WE CONTINUE to be impressed with the number of patients who have vague and indefinite symptoms, aches, pains, occasional slight fever, who turn out to have undulant fever. Many cases of chronic ill-health, with a multitude and variety of vague symptoms, will, on careful study, reveal the subclinical type of undulant fever.

We can not depend upon the agglutination test or the intradermal test. A careful study of these patients' history, and symptoms, investigation of the origin of the trouble, and determining if possible the presence of undulant fever in a herd of cattle from which the milk and butter used was obtained, will often be of great help.

All milk for human consumption should be pasteurized. From this pasteurized milk, by means of a cream separator, the cream may be obtained for use in making butter. Butter made in this way would be safe to use, also buttermilk made from the skimmed milk; and pasteurized whole milk made into lactic-acid buttermilk.

The treatment of undulant fever is not easy. Those who are able to stand fever-therapy are for-

tunate. This is perhaps the best and can be used in conjunction with vaccine. In those who can not stand this form of treatment, the immunization of donors and blood transfusions from these are excellent. It is necessary, however, that the donors be given vaccine until the blood reaches a high titer and then transfusions from these donors will be of great help. In any event, it is necessary that the treatment be kept up continuously sometimes for weeks or even months before relief is obtained.

DIAGNOSIS OF ENLARGEMENT OF THE THYROID GLAND

THE DIAGNOSIS of enlargement of the thyroid gland is not always easy. A goiter may be for the greater part substernal. Even the smallest adenomatous growths may project downward from the lower pole of the thyroid gland and not be readily palpable except when a very careful examination of the neck is made.

First observe the patient carefully. A thin patient's enlarged thyroid usually shows up, but even then, if the enlargement projects downward or backward, or both, inspection may reveal nothing diagnostic and palpation is more difficult.

In all cases it is well to have the patient swallow several times, each time palpating the right or left side, or both together. During the process of swallowing the thyroid gland comes upward and then drops down again, and it is during this time that one can often feel an adenomatous growth which would ordinarily escape attention.

I have often been surprised at the size of a removed thyroid mass which had felt only slightly enlarged to the examining fingers. On elevating the thyroid gland during the process of thyroidectomy a downward or backward projection, particularly a retrotracheal lobe, made a surprisingly large mass which was not suspected before operation. In all cases, in which a substernal thyroid suspected, a careful x-ray examination should be made in order to get an accurate diagnosis. It is not a bad idea to examine a patient at different times over a period of a week, if there is some doubt as to whether or not there is an adenomatous growth.

In all cases of suspected enlargement of the thyroid a basal metabolism test should be done, preferably two or three in succession—each day for three days usually suffices.

Even with enlargement of the thyroid gland there may be no increased basal rate and conversely, we sometimes find an increased basal rate with very little enlargement.

Every suspected case of disease of the thyroid gland should receive a thorough examination. Any operation found necessary should be done only by those well experienced in thyroid surgery.

DEPARTMENTS

INSURANCE MEDICINE

H. F. STARR, M.D., *Editor*, Greensboro, N. C.

DYSPNEA

DYSPNEA is an extremely important symptom which should receive careful attention in any examination. When we consider its implications and the case with which a history can be elicited or its presence demonstrated, it is surprising that it so often receives but little attention in the routine examination for life insurance. Its value and accuracy as a symptom compare favorably with many tests requiring considerable time, labor and special equipment.

The demand for pulmonary ventilation is subject to sudden change which is met by variation in the depth of respiration and if necessary an alteration in the rate. The reversal of inspiration into expiration is brought about by the Hering-Breuer reflex. With inspiration the alveolar atmospheric tension increases to a point where the reflex turns from that of inspiration to expiration. The afferent impulse is through the vagus, the efferent by way of the phrenic and spinal nerves. The points at which the reflex becomes reversed is variable with different conditions, rendering the mechanism flexible. The respiratory center not only initiates the respiratory rhythm but controls the points or threshold of the reflex. With an increase in the hydrogen-ion concentration or acidity of the respiratory center, the points of the Hering-Breuer reflex become farther apart and as a consequence respirations become deeper and the rate increases, while if the hydrogen-ion concentration decreases or if the center becomes more alkaline, the points approximate and respirations become shallower and slower.

The gross hydrogen-ion equilibrium is maintained chiefly by the kidneys, but the finer variations are controlled by the lungs through their elimination or retention of carbon dioxide. The kidneys' role may be compared to that of the coarse adjustment on the microscope, while that of the lungs corresponds to the fine adjustment. Carbon dioxide is a weak acid, soluble and readily diffusible, serving admirably in making the rapid and delicate adjustments here required. With an increase of hydrogen-ions, the respiratory center, through its control of the Hering-Breuer reflex, increases pulmonary ventilation which augments the elimination of carbon dioxide, thereby reducing the hydrogen-ion concentration of the blood. When the hydrogen-ion concentration is reduced, the opposite occurs and pulmonary ventilation is reduced.

Oxygen tension also plays an important role. If the supply of oxygen to the respiratory center is inadequate the center becomes more sensitive to hydrogen-ion concentration.

Thus, dyspnea may result from either increased acidity or decreased oxygen pressure in the respiratory center. Also, any condition in the lung, such as pulmonary engorgement, emphysema or fibrosis which will exaggerate the excitability of the Hering-Breuer reflex will play an important part in the production of dyspnea.

With this brief and much simplified description of the mechanism of respiratory control it is obvious that the cause of dyspnea may be either acidosis; want of oxygen; lesions near the respiratory center; increased sensitivity of the Hering-Breuer reflex whether due to pulmonary congestion, emphysema or fibrosis; interference with the action of the respiratory muscles; or neuroses.

Dyspnea may be physiologic. A young normal athlete in excellent training can become short of breath. Dyspnea is not abnormal unless it is more readily produced than in the average individual, considering age, occupation and living habits. It is not always easy to draw a line separating normal breathlessness from the abnormal.

Metabolic disturbances causing dyspnea by acidosis may be due to diabetes, nephritis or advanced prostatism. In hyperthyroidism there is an excess of carbon dioxide together with altered sympathetic action. In insulin shock low-blood-pressure and possibly its effect upon the carotid sinus produces rapid, shallow breathing.

A variety of pulmonary conditions may produce dyspnea. Laryngeal or bronchial obstruction gives rise to carbon-dioxide retention and oxygen want. Emphysema and pneumoconiosis produce loss of elasticity of the pulmonary tissues and increase the sensitivity of the Hering-Breuer reflex. In lobar pneumonia or massive collapse there is pulmonary congestion and sensitivity of the Hering-Breuer reflex and in bronchopneumonia there is in addition carbon-dioxide retention and oxygen want. The acute conditions are not encountered in the examination of applicants for life insurance except in the history.

Aside from dyspnea due to physiologic causes or acute infections, circulatory disease is by far the most common cause. Breathlessness is the first symptom of cardiac disease in the majority of cases. Dyspnea in circulatory failure is a compensatory reaction, complex in origin, based partly upon central anoxemia and carbon-dioxide retention. When the myocardial reserve is reduced dyspnea on exertion is due to failure of the heart to deliver the required amount of oxygen to the respiratory center. When the left ventricle fails to

maintain the normal output of blood, there is an accumulation of blood in the ventricle, leading eventually to its dilatation and increased pressure in the pulmonary circuit. In the early stages, the right ventricle continues to discharge a normal supply of blood to the lungs, thereby increasing the engorgement. With slowing of both the systemic and pulmonary circulation a reduction in vital capacity and an increase in anoxemia results.

Simple changes in posture alter the load required of the left ventricle and increase or decrease the venous pressure and the return of blood to the heart. The total circulating blood volume increases during sleep and pulmonary engorgement is favored, giving rise to nocturnal attacks of dyspnea, so-called cardiac asthma. These attacks must be distinguished from bronchial asthma. This may be difficult when symptoms appear in patients of middle age and beyond. Here the heart should be considered at fault until proved otherwise. Cardiac asthma is usually preceded by gradually increasing dyspnea on exertion of rather recent occurrence, while dyspnea due to chronic pulmonary disease will have been present for years. Differentiation may be clouded by the fact that in the asthmatic patient of middle age or beyond asthmatic breathing may become continuous, worse at night, and tolerance to effort may decrease as emphysema, bronchiectasis or pulmonary fibrosis develops. In such a case it is difficult to say whether the heart is at fault or just when myocardial failure begins. Inability to perform in comfort exertion which formerly caused no discomfort is very suggestive of cardiac disease. Both pulmonary and cardiac disease may be present, each contributing to the production of dyspnea.

The obese are generally short of breath. If there is an increase in dyspnea in a person long obese, without recent gain in weight, cardiac disease should be suspected until ruled out by careful investigation. Obesity invariably adds to the work of the heart.

Nervous exhaustion may give rise to the complaint of shortness of breath. These patients usually describe the sensation as inability to take a deep breath, a feeling that the lungs do not completely fill during inspiration, or as a heavy sensation in the chest. There may be periodic sighing. Attacks are precipitated by nervous or emotional strain rather than by physical exertion, which is an important point to consider in differentiating between dyspnea due to nervous exhaustion and dyspnea due to organic disease.

The majority of applicants for life insurance are in good health and it is rare that one in advanced stage of chronic disease presents himself for examination. Signs and symptoms are not as a rule

definite and pronounced as with the patient whose disease has become established. As with other signs and symptoms, the examiner should not expect to find dyspnea as pronounced in the applicant for insurance as in the average patient. It is not apt to force itself upon the attention of the examiner. It must be sought out. The chief object of the examination for life insurance is largely to discover disease in its incipency.

UROLOGY

RAYMOND THOMPSON, M.D., *Editor*, Charlotte, N. C.

PROGNOSIS IN BILATERAL RENAL TUBERCULOSIS

RECENT statistics reveal that the incidence of tuberculosis in man is much less now than formerly.¹ Henderson states that tuberculosis of the bones and joints has decreased to such an extent that some medical schools find it difficult to obtain sufficient number of patients who have such lesions for purposes of instruction. Urologists agree that the incidence of renal tuberculosis has decreased considerably in the past two decades. The degree of involvement of the kidney and bladder is less than in former years and the clinical evidence of its existence is often more obscure. This is the result of elimination of etiologic factors and of increased resistance to tuberculous infection.

Bilateral renal tuberculosis is reported more frequently in recent years. From 1910-1934 approximately 2,200 cases were observed at the Mayo Clinic in which a diagnosis of renal tuberculosis was made. Clinical evidence of bilateral involvement was present in 291 cases (13 per cent).

Definition.—There is a decided difference among urologists as to the type and degree of evidence of disease deemed necessary to establish such a diagnosis. Radicals state that renal tuberculosis at the time of onset is bilateral in all cases. There is insufficient pathologic evidence available to substantiate such a statement and much clinical evidence to disprove it. If the urine obtained on catheterization from the least-affected kidney does not contain pus cells, is negative on stain for the tubercle bacillus, and inoculation of the guinea pigs gives negative results, the kidney may be accepted as normal and removal of the diseased kidney is permissible. The best prognosis is offered after nephrectomy. The mortality for 5 years after operation was 20 per cent and for 10 years after operation 34 per cent. Bilateral renal tuberculosis would be very improbable in most of the cases of this group.

The controversy starts concerning the next group of cases. In a series of proved tuberculosis

in one kidney and no microscopic evidence of infection in the urine from the good kidney observed at the clinic, guinea pigs were inoculated with the apparently negative urine. In many cases the reactions were positive. From the follow-up examination we concluded that the positive report was due to technical factors. In another group of cases three or more pus cells per high-power field were found in the urine from the good kidney. If the presence of mycobacterium tuberculosis was also demonstrated the mortality for six years after increased to 60 per cent. A third of the patients who had definite evidence of bilateral disease at the time of operation lived five years or longer. Among this group were patients who apparently recovered from the infection. Three inferences are possible: (1) the kidney may occasionally recover from tuberculous infection; (2) positive evidence of the disease in the good kidney as determined by inoculation of urine into guinea pig is inaccurate and misleading; (3) there is a definite group of patients who live fairly comfortably with chronic tuberculosis. The apparent recovery is explained by the last two inferences.

Indications for operations: Unless there is decided difference in the extent of the disease in the two kidneys surgical intervention is rarely indicated. It is unreasonable to remove one kidney when the extent of the disease is equal in both kidneys. The presence of tuberculosis in the other tissues of the body, even if active, does not necessarily interfere with nephrectomy. Active pulmonary complications would contraindicate operation if both kidneys were involved. In most cases of bilateral renal tuberculosis there is not a great difference in the degree and extent of the disease in the two kidneys and other complications make surgical treatment impossible.

Sex and age: Only 39 patients (10 per cent) were females. Of the 204 patients, 58.8 per cent who had bilateral renal involvement were in the fourth and fifth decades of life. The youngest was 28 months, and the oldest 63 years.

Symptoms and laboratory data: The symptoms did not differ much from those of unilateral tuberculosis, except that they were more severe. A period of dysuria and frequent micturition many years ago, with recovery. This is the period of infection and occlusion of one kidney, with recent infection of the other kidney. Röntgenographic studies revealed areas of renal calcification. Cystoscopic examination reveals more involvement of the bladder, with deformity and ulceration, than in unilateral renal tuberculosis.

Complications: Renal tuberculosis is a local manifestation of a constitutional disease.

1. Alst. Braasch, W. F., & Sutton, E. B.: Prognosis in bilateral renal tuberculosis. *J. Urol.*, 46:567 (Oct.), 1941.

Renal function: A slight reduction in function usually is noted in the early stages of unilateral renal tuberculosis. In spite of apparently advanced involvement of both kidneys, the combined renal function often is normal or reduced only slightly.

Hypertension: The incidence of hypertension associated with unilateral renal tuberculosis is less than that observed among average persons.

Prognosis: The subsequent clinical course was traced in 167 of 204 cases. Most of the patients traced died, directly or indirectly, of some form of tuberculosis; 58.1 per cent lived 5 years or more; 26.3 per cent were living 15 years after. The general condition of most of the patients living 10 to 15 years after examination was better than expected. The prognosis in cases of bilateral renal infection of equal degree is distinctly worse than in cases in which infection is predominant in one kidney. Sixty-three patients (66.6 per cent) died within two years, only seven lived five years or more.

In reviewing the cases in which there seemed to be more resistance to the disease, it is difficult to find any conspicuous feature that is common to all. The care of the patient after leaving the clinic at best was inadequate. With supervised rest, good diet, and heliotherapy, the survival rate among these patients would increase.

Summary and conclusions: Our previous concepts concerning life expectancy in cases of non-surgical renal tuberculosis demand radical revision. Unless the indications for nephrectomy are quite definite in a case of bilateral disease, it would be well to give Nature a chance.

SURGERY

GEO. H. BUNCH, M. D., *Editor*, Columbia, S. C.

THE TREATMENT OF CANCER OF THE LIP

BECAUSE of the spread of education on the subject, many persons now have suspicious lesions of the lip treated early. Most cases go directly to the dermatologist or to the radiologist and are seen by the surgeon only as he is called in consultation. In an attempt to determine the indication for radiation as compared to that for surgery, or for the combination of radiation and surgery, in the treatment of cancer of the lip, members of the staff have recently reported a detailed study of 375 consecutive cases treated in the Memorial Hospital, during the 7-year period from 1928 to 1934, with the surprisingly high net 5-year cure rate of 70 per cent.

Radiation alone is used in primary superficial lesions whether large or small, because of better cosmetic effect. Deeply infiltrating and eroding primary lesions—over one-third of the total group

—are treated by wide surgical excision with plastic closure. There should always be a safe margin of normal tissue even at the risk of the ultimate cosmetic effect being not so good. Bulky tumors that are not infiltrating may continue for two or three years without glandular metastases. The tendency to metastasize varies greatly and is of greater prognostic value than is the size of the growth.

The treatment of metastatic lesions is a great problem. In the absence of palpable cervical metastases, after the primary lesion has been eradicated, there should be neither prophylactic radiation nor block dissection of the neck. In cases without demonstrable metastases in which the primary lesion has been cured only 8 per cent have developed metastases within an observation period of five years. Aspiration biopsy provides tissue for histologic examination without surgical excision.

The choice of treatment for clinically demonstrable cervical metastases should be determined by the indications in the individual case. Radiation alone should be used in the aged, in the poor-risk patient and in the patient with lesions too disseminated or too far advanced for surgical removal. It may be administered without particular risk at the same time and in conjunction with irradiation of the primary lesion. In the treatment of cancer the term inoperable is not synonymous with incurable. It should be known by all doctors that "proved clinical metastatic nodes can be cured by radiation alone." Eleven patients with histologically proved cervical metastases have survived for five years. Of 35 microscopically proved cases having block dissection of the neck there have been 13 5-year survivals without recurrence. In the final analysis the selection of radiation or surgery is optional.

Cancer of the lower lip, in which irritation is a striking etiological factor, is much less malignant than is the spontaneous cancer of the upper lip. Early lesions of the lower lip up to 1.5 cm. in diameter may be cured in practically all cases if the patient is properly treated and regularly observed for recurrences, and in lesions over 3 cm. there is a cure rate of 55 per cent. In all lesions which have had no metastases at any time the cure rate is 95 per cent. Of 17 patients with primary cancer of the upper lip only 7 survived for five years.

Although the authors do not comment upon it, the Memorial Hospital study shows a definite trend toward irradiation as compared to block dissection in the treatment of cervical metastases from lip cancer. This conforms to the practice over the nation generally. Certainly, block dissection of the neck for any cause is now seldom done.

DENTISTRY

J. H. GUION, D. D. S., *Editor*, Charlotte, N. C.

TOOTH DECAY

A TOOTH for each pregnancy is an old saying. However, pregnancy can be so managed as to introduce a new dictum—"Healthy teeth through all pregnancies." In dental disease during pregnancy, the most important etiologic factors are improper diet, certain disease conditions and endocrinologic imbalance. There is no other time when the diet should be so well chosen as in pregnancy. One should not assume that the patient eats sensibly just because she appears strong. Adair states that a pregnant woman requires a diet so varied that she will receive in the necessary amounts proteins, fats, carbohydrates, vitamins, iron, calcium and phosphorus. The diet should be sufficient to build her body tissues to full strength and without storage of excess fat. The minimum protein requirement must be maintained. Minerals, the chief building material for bones and teeth are, with meat, an important source of iron, to supply hemoglobin. Foods of high mineral content are therefore desirable and are probably the best means of administering inorganic salts. These are found in milk, certain vegetables and fruits. The best calcium-containing food is milk and skimmed milk products, but calcium is obtainable also from beans, cauliflower, dandelion greens, green figs and oranges. Iron is obtained from beef liver, oysters and spinach, less readily from eggs, potatoes, codfish, herring, tomatoes, peas, lettuce, dates, prunes and strawberries. The vitamins are found in milk and its products, meats, eggs, whole wheat, cereals, vegetables, fruits and codliver oil. With such a wide distribution of food elements meals can be appetizing as well as wholesome. Cutting down on sugars and fats during pregnancy is a sensible precaution as long as enough carbohydrate and fat are left in the diet to furnish necessary energy. Bulk to combat constipation, except in spastic constipation, as well as to supply needed food, is best obtained from vegetables and fruits. Desserts should be of fruits, not pastry. Coffee, tea, alcohol and smoking are all undesirable during pregnancy. In a study of three groups of pregnant women as regards diet and teeth: In the first group the diet contained plenty of milk, raw fruits and vegetables and cooked vegetables; in the second group, there were little, if any, fruit, vegetables and milk in the diet; in the third group, the diet contained plenty of cooked vegetables.

In the first group, the condition of the teeth and gums was usually excellent; in the second it was very poor, there being many carious teeth and swollen, bleeding gums; in the third, the teeth and

gums were in very poor condition. When these patients were interrogated it was learned that the vegetables were cooked three-quarters of an hour to an hour and a half. Cooking vegetables for that length of time destroys many vitamins and dissolves the minerals into the water, which is subsequently discarded. Hence, it is good practice to instruct all pregnant women to make sure that vegetables are not overcooked and to eat plenty of raw vegetables and fruit daily, and in addition to eat liver at least once a week for its iron content in order to combat the anemia prevalent during normal pregnancy, and to eat fish and seafoods for their iodine content twice a week, and two pints of milk and to take two capsules of dicalcium phosphate with viosterol daily.

The lactating period is not infrequently given less attention than the prenatal period. The need for plenty of vegetables and fruits, vitamins and minerals during pregnancy is often last sight of during lactation.

It is generally conceded that breast-feeding is superior to artificial feeding. Therefore, if the diet is important prenatally, it is just as important during the lactating period, for general health and for dental prophylaxis.

Dental caries is a destructive process affecting the hard tissues of the teeth. It is practically universal and constitutes the most prevalent disease known. It is a disease and is to be regarded as such and not just a hole in the tooth. It is probably the only disease of the body that does not have a tendency toward recovery. A cavity does not become smaller and smaller to finally disappear; on the contrary it gets larger and the only remedy is to remove the decay and fill it with some foreign materials.

Caries is *notably* a disease of childhood, 95 per cent being found to be afflicted with the disease. Children in the tenth and twelfth year average seven cavities each.

The period of childhood is thus that of greatest susceptibility. It is the period of rapid growth of the body at which time calcium and phosphorus go into building long bones, not much being left for calcification of the teeth unless the excessive demand is recognized and supplied.

There are two main theories today as to the cause of caries. One believes in the theory of bacterial plaque and the other believes that all preventative dentistry is by diet. The theory of the bacterial plaque is that the plaques are nuclei of decay which develop from without inward.

The fermentation of carbohydrates by bacteria results in free lactic acid, which decomposes the mucin of the saliva and precipitates adhesive mucic acid. The mucic acid envelops the colony of micro-

organisms and the carbohydrate food debris, cementing them to the tooth surface. This mass of bacteria and food debris adhering to the surface of the tooth is the bacterial plaque, and under its protective covering the lactic acid action is intensified and caries goes on undisturbed. The plaque may thus be regarded as the initial cause of dental caries, and as the essential factor in its localization.

The logical deduction would seem to be then that the prevention of dental caries lies chiefly in those measures which will prevent the formation of the bacterial plaque or effect its removal before disintegration of the enamel. The principles of prevention of dental decay have been based on this deduction, with the result that extreme cleanliness of the tooth surfaces has greatly reduced the incidence of caries, but the problems of immunity and susceptibility are still unsolved.

Every dental practitioner knows from clinical experience of seemingly clean mouths which are ravaged by dental caries; and of unclean mouths, with teeth covered with plaques and fermenting carbohydrates showing a high degree of immunity.

The most recent researches into the problems of immunity and susceptibility point to the diet as the great controlling factor. A comparison with the refined and unnatural dietaries of modern civilized nations, in each instance highly susceptible to dental caries, probably offers the solution to the problem.

Diet and absorption together play an important part in susceptibility to caries. All the necessities for building body structure must be gotten from the food taken into the body. In countries where people live in the open and live on natural diet, their mouths show little caries. Therefore proper diet and assimilation is the answer to dental immunity or non-susceptibility to caries that may be obtained by the body to a certain extent.

PENETRATION OF PHENOL IN TOOTH STRUCTURE

(B. O. A. Thomas, New York, in *Jl. Dental Research*, Oct.)

Phenol does penetrate tooth structure, and is not self-limiting as a result of its action on organic matter. The degree of penetration depends on several factors. Histologic evidence shows that there are inflammatory reactions in the dental pulp under phenolized cavities even though there are no subjective symptoms. However, such evidence is not sufficient to warrant the condemnation of this drug for cavity sterilization.

In vitro experiments showed the penetration from the pulp canal through the dentin and cementum to the surface. *In vivo* tests illustrate that phenol will penetrate from the base of a cavity to the pulp, following the curvature of the dentinal tubules.

TUBERCULOSIS

J. DONNELLY, M. D., Editor, Charlotte, N. C.

PRIMARY MALIGNANT TUMORS OF THE LUNG

CARCINOMA of the lung was considered a few years ago as somewhat of a rarity. Recent statistics gives the incidence as from 10 to 15 per cent of all carcinomas. Unfortunately there still remains in the minds of numbers of the laity, and of a good many physicians, the idea that cough, hemoptysis and dyspnea are always due to tuberculosis.

In the November issue of *Diseases of the Chest* Konterwitz states that neoplasms of the lung may occur at any age, but are most frequent between the ages of 40 and 60 years, and more frequent in the male than in the female by a ratio of 5 to 1, for which disparity between the two sexes no satisfactory explanation has been found. No relationship is found between occupation—not even silica work—and lung carcinoma. The tumor may originate in the parenchyma, but the origin was in a bronchus in 41 cases, and almost all bronchogenic tumors are of epithelial origin.

A matter of prime importance is differentiating between malignant conditions of the lung and tuberculosis. The malignant tumor may occur as a single large mass originating in the root of the lung, or there may be a number of nodules of various sizes throughout both lungs. The lungs may contain numerous small nodules resembling those of miliary tuberculosis. Malignant disease of the lungs often occurs as a general infiltration of large areas of lung tissue, resembling an extensive tuberculous infiltration. Soft cancerous areas in the lung may break down, and, discharging into a bronchus, form a cavity, which, secondarily infected, simulates a putrid pulmonary abscess. Pleural effusions, not uncommon, tend to recur after aspiration, and are often hemorrhagic. A hemorrhagic effusion, however, is always suggestive of cancer, but a clear effusion does not eliminate that condition. In 662 autopsies at Phipps Institute there was no case in which lung cancer and tuberculosis occurred together.

The author lists the symptoms as cough, expectoration and hemoptysis, all due to bronchial irritation. The size, location and type of the new growth, with or without secondary pyogenic infection, are the causes of the clinical symptoms of lung tumors. Blood in the sputum, or small hemoptyses in a person over 40 years of age, whose sputum is persistently negative for tubercle bacilli should arouse suspicion of primary cancer of the lung. Pain in the chest is early and often severe, and may radiate from the chest to the arm.

This pain may indicate involvement of the pleura, but may be a symptom of pressure. Mediastinal tumors may cause pain similar to that of thoracic aneurism. Dyspnea is frequent, particularly if there is a pleural effusion.

The constitutional symptoms are those of cancerous growths in any part of the body. Progression may be rapid or slow, the duration ranging from 4 months to 3 years, the acuteness depending on the rate of atelectasis caused by pressure of the mass. The author states that in nearly all cases there is an irregular type of fever which may subside and then recur, due to the development and recrudescence of a non-specific type of pneumonia. The most common pressure sign is the occurrence of dilated veins over the upper part of the chest, caused by pressure on the superior vena cava or one of its tributaries.

If the tumor arises in a large bronchus, atelectasis of part or of a whole lobe may result, with dullness and flatness over the diseased area and diminished or absent breath sounds. Involvement of the pulmonary tissue causes bronchovesicular or bronchial breathing. Frequently the growth becomes necrotic, in which case the physical findings suggest pulmonary abscess. Often this condition causes a diagnosis of pneumonia. The author says that persistent findings such as these, with the continuance of the fever, demands bronchoscopy, which will usually give a positive diagnosis. In cases with practically no physical signs the author advises injection of lipiodol followed by x-ray films. Effusion indicates looking for tumor cells. Films of the chest are always necessary in cases of suspected lung cancer, but a diagnosis can only be made by combining the x-ray and physical findings. Widespread use of the x-rays and the bronchoscope has made easier the diagnosis of primary carcinoma of the lung. The information obtained by bronchoscopic examination as to the size of the growth and the type, and as to whether or not there is a complicating infection, is of great value in pre-operative and postoperative treatment.

Primary cancer of the lung must be differentiated from pleural effusion, Hodgkin's disease and lymphosarcoma, pulmonary tuberculosis (in persons over 40 years of age), and chronic inflammatory conditions of the lung. A hemorrhagic effusion although not positive evidence of malignancy, is suggestive. The presence of enlarged lymph glands elsewhere in the body which may be removed for laboratory examination will serve to differentiate in Hodgkin's disease. Persistent absence of tubercle bacilli from the sputum indicates bronchoscopy if there is a suspicion of carcinoma. Chronic inflammatory conditions of the lung are distinguished by long duration and the absence of severe constitutional symptoms.

GENERAL PRACTICE

JAMES L. HAMNER, M.D., *Editor*, Mannboro, Va.

THE CHOICE OF ANTACIDS FOR TREATING PEPTIC ULCER

CERTAIN individuals develop peptic ulcer and even though the ulcer heals, recurrence in these susceptible persons is likely.¹ The first attack and the early recurrences are easily controlled by dietary measures, rest, sedatives, antispasmodics. If the patient is taught permanently to live within his physical, mental and digestive capacities and if he will give up smoking, eat six times a day and solve or resign himself to his financial, sexual and emotional status he may never have a recurrence.

In the uncoöperative or neglected-ulcer patient alkalis find their greatest use. When all other methods fail constant neutralization of the gastric contents 24 hours a day results in *freedom from pain in one day and ulcer healing in four weeks*.

An ideal antacid would be tasteless and cheap. A small amount would neutralize considerable acid. It would be neither constipating nor laxative, insoluble so as not to leave the stomach quickly, have a prolonged action and not produce a secondary rise of acid. Its cation should be unabsorbable. Carbon dioxide gas should not evolve after it reacts with hydrochloric acid.

Antacids commonly employed for treating peptic ulcer:

Sodium bicarbonate should not be used for treating peptic ulcer.

Magnesium oxide is the most powerful antacid. It can well be supplanted with magnesium trisilicate.

Magnesium carbonate is also laxative and causes a secondary acid rise. Its use can be discontinued.

Calcium carbonate is a good antacid and were it not for its constipating action and for its release of carbon dioxide in the stomach, it would approach the ideal in antacid therapy.

Sodium and potassium citrates valueless in treating peptic ulcer.

The tribasic phosphates of calcium and magnesium could well be abandoned.

Bismuth salts also have little neutralizing value and are constipating.

Aluminum hydroxide gel's absorptive power is nil, because on interaction with hydrochloric acid it is changed to soluble aluminum chloride. If used in sufficiently large amounts to obtain intragastric neutrality, constipation results and fecal impaction is not uncommon. They are too expensive for constant and routine use.

Magnesium trisilicate, recently introduced for treating peptic ulcer, a tasteless powder and very inexpensive, was recently accepted for inclusion in

New and Non-Official Remedies. It is insoluble in water, has a prolonged antacid action, and a good neutralizing action. Since magnesium is nonabsorbable, alkalosis can not result. In susceptible individuals it may cause an increase in frequency of bowel movements.

Severe cases of ulcer should be in hospital, have milk and antacid hourly, night and day. Cream is poorly tolerated. After a few days, pudding and purées are added and the number of feedings slowly decreased. After 4 weeks in hospital and 2 to 4 weeks of home convalescence, the patient is on a fairly complete diet. He or she must permanently eschew spices, condiments, excess roughages, alcohol and tobacco, and take a glass of milk between meals and at bed time.

In milder cases in which antacid treatment is indicated the patient takes a dram of the selected antacid, usually magnesium trisilicate. The liquid medication is a mixture containing one half grain of soluble phenobarbital and ten minims of tincture of belladonna to the dose. If the patient has night pain he is instructed to set his alarm clock for an hour before pain is anticipated and to drink a glass of milk with a dram of powder at that time.

1. Editorial in *Digest of Treatment*, October, 1940.

SUDDEN DEATH

CALLED to see a person who has died suddenly, one needs to be well-informed as to the probabilities as to cause. Here¹ they are.

Probably the most common cause of sudden death in young adults is a ruptured aneurysm at the point of origin of the cerebral arteries in the Circle of Willis.

In apparently healthy males, probably the most likely cause of immediate death lies in the coronary system—either acute or chronic coronary artery occlusion. In elderly patients so prone to be found dead in bed, the cause is often hemorrhage arterial, intracranially or in other body cavities.

Status lymphaticus has no pathological basis as a cause of sudden death.

The heart, especially the myocardium, must be suspected as a seat of "infectious myocarditis" in infection in the young and the very old; from such cause patients in these extremes of age are particularly liable to succumb suddenly in fulminating acute infections.

Possibly the ultimate cause of all cases of sudden death may be ascribed as ventricular fibrillation.

Important to remember is that foul play is always a possibility, and that poisoning or trauma must be excluded before considering a more natural

reason. In considering sudden heart standstill from coronary occlusion, remember that coronary embolism is a rare finding, occurring presumably from bacterial endocarditis, if at all. Instant death from hemorrhage is probably always due to the rupture of an aneurysm in either the thoracic aorta, the cranial cavity, or the abdominal cavity—in that order. Aneurysm of the aorta is usually, though not always, syphilitic, and frequently ruptures into the pericardial cavity producing cardiac tamponade. Sometimes it may be detected by careful blood pressure readings and examination of the heart sounds. A probability of being correct is not more than 35 per cent, and often the pathologist, after he has had hours of time and study of organs, removed and in situ, can not for certain put his stamp of disapproval upon the organ or organs responsible for sudden death.

ADVANCES IN TREATMENT OF PERIPHERAL VASCULAR DISEASE

HERE are some pickups from an article¹ recently read.

Raynaud's disease—may be due to chronic arsenic intoxication, and favorable results have followed the use of sodium thiosulfate intravenously, 0.5 gm. twice weekly for 1-20 weeks.

Arterial embolism—Diffuse regional arterial spasm must be broken. Papaverine hydrochloride intravenously or intraarterially is helpful as an antispasmodic, ½ gr. every hour or so.

Thromboangiitis obliterans—Stop smoking. Typhoid vaccine intravenously very effective in producing vasodilatation in the extremities. Eat no foods rich in phospholipins. Sodium iodide thiosulfate in 3.3 gm. doses intravenously every other day for 3-6 weeks.

Arteriosclerosis—Reduce the level of blood fat by taking a diet free from eggs, milk products and fat meat. Mechanical devices for peripheral vascular diseases are valuable and include the Saunders bed, intermittent arterial compression, intermittent suction and pressure.

1. E. V. Allen, in *Jour. A. M. A.*

INTERNAL MEDICINE

GEORGE R. WILKINSON, M.D., *Editor*, Greenville, S. C.

IS THE 8-HOUR DAY PHYSIOLOGICAL?

AGITATION for shorter hours and more wages has held forth with little opposition, since the turn of the century. Now, the eight-hour day and five-day week has become common practice in industry. With the shortening of the day have come the second and the third shifts; so today industry rolls merrily along, at a pace of 24 hours with three different groups of people. This limitation of the

1. J. L. Wade, Parkersburg, in *W. Va. Med. J.*, Nov.)

working hours has produced problems in several fields.

First, the amount of leisure time has increased. Just how to spend this time profitably constitutes no mean problem. In the old days, when a person worked 10 to 12 hours, six days a week, the amusement problem was present, but with one whole day off and two to three hours lapped off each day, the less facultative group to whom such practices apply find their increased pay inadequate to pay for amusements. For this group to develop to the point where they can entertain themselves will require considerable time and much education.

For women the change is not so severe as for men; since women can find in their homes many things to do that they ordinarily would be doing were they not working on the outside. The men, on the other hand, are not so easily occupied. Where the families live in company-owned villages, apartments or small town houses, diversion is difficult. Where they commute from rural sections, many of the cotton-mill people actually find time enough away from their work to raise and produce supplies for the family. Of course, the idle time theoretically is a godsend; but, in practice, unless the man can be occupied with suitable labor or other time-consuming activities, the additional spare time will afford them an opportunity not only for wasteful living, but also for unhygienic, unphysiological and perhaps even degenerative pursuits. The solution for this difficulty may be found in night schools for art, music, manual arts, gardening, athletics and other avocations.

Second, the next great difficulty with the eight-hour shift may lie in the fact that it is unphysiological for a person to work eight hours straight without relaxation, rest or suitable food. With the cost of labor increased by the short hours, industry finds it necessary for the machinery to be kept going continuously, through the period, without interruption. It is customary not to allow any time for the physiological functions of the body. It is well known that a person can not work eight hours straight without inducing sufficient fatigue and hunger to cripple the precision of his labors.

Third, the shifts work a physiological hardship, particularly on the last night group. Those that go to work at 11 at night and work until 7 in the morning do so from Monday through Friday. During this time the worker's family keeps regular hours. The children are off to school in the morning, they must be fed when they return and the housewife is forced, not only to prepare meals suitable for herself and the children, but also to feed the breadwinner. Those on the so-called "graveyard" shift usually eat breakfast with the family and get to bed by 8 o'clock. Then they get up

about 4 in the afternoon, eat supper about 6, and a light lunch at 10. Very few carry with them to their work any lunch. After they have been working for several hours they get a sandwich and a soft drink. Here the normal physiological process is reversed. Ordinarily a person works in the daytime and if he is not too fatigued plays in the late afternoon and in the evening. For the graveyard shift, play follows rest, and the worker goes to his toil having had his usual amount of play, when he is most rested and has left for industry the next eight-hour period. Then come Saturday and Sunday. The worker reverts to the normal hours of his family. This change from night shift to the usual customary family hours is too sudden. By the time one gets accustomed to the night work he has day hours, and vice versa. The physiological effect this may have on the night worker is difficult to assay. One factor may be pointed out that is easy to see. This pertains to the rhythmical rise and fall of the body temperature. Ordinarily, the body temperature reaches its lowest ebb at the end of the night's rest, when the body is in what might be called the basal state. During the day the temperature rises and reaches maximum about nightfall. On the night shift there is no opportunity afforded to establish a definite temperature rhythm, since the body is hardly facultative enough to make a change of this sort twice within the compass of a week.

During the present emergency many workers have been called back to industry who would, in ordinary circumstances, not be employed. The large bulk of these people are put on the night shift, since the regular workers avoid the night shift and, by virtue of their length of service, are afforded the opportunity to choose their shift. So, in the night group one finds to begin with those less fit economically and perhaps less fit physically. It is no small wonder that the casualty companies are complaining about the increase in the accident rate. Perhaps some of the reasons for the sharp rise in insurance outlay may be accounted for by some of these considerations.

HYPOTENSION IN BORDERLINE DEFICIENCIES

(J. M. Hughes, in *Bull. Greenville (S. C.) Co. Med. Soc.*, Nov.)

In hot weather one consumes large amounts of water without sufficient mineral intake to make up what he is losing through excessive perspiration. Indicated are mineral salts by mouth, and liver extract and thiamin-chloride hypodermically in alternate doses.

Liver extract was given in all these cases having hemoglobin of 68 per cent or less; to our surprise in 2 of the liver extracts out of the 6 we used we found some factor, other than blood building property, that hastened the return to a normal level.

In the second group anemia was found along with the hypotension and relieved by iron by mouth and liver extract, 5 u., every third day.

In the third (vitamin-deficiency) group there are many who eventually fall into the hands of quacks.

Those that don't take sufficient amounts of vitamins in their diet and those who, through digestive disturbances or the use of large amounts of laxatives, especially mineral oil, are prevented from absorbing the vitamins. Any one of a number of excellent preparations hypodermically will turn the trick, or large amounts of concentrated vitamins by mouth. The first procedure is best.

Hypotension when found without an obvious cause may mean deficiency of minerals or of vitamins or of a hypochromic anemia of unknown origin.

There is available in at least two commercial liver extracts a substance, other than the blood-building factor, that helps raise a low blood pressure.

A large number of patients that are now lost to the patent-medicine class and the chiropractor, through being classed as neurotics, could be and should be studied for possible borderline deficiencies.

OPHTHALMOLOGY

HERBERT C. NEBLETT, M. D., *Editor*, Charlotte, N. C.

MASSIVE INFLAMMATORY EDEMA OF THE CONJUNCTIVA

THIS CONDITION arises as the result of various infections of the external tissues of the eyeball, of the lids, the structures adjacent thereto, and following trauma to these tissues from any cause. This is not to be confused with non-inflammatory edema the result of systemic disease.

This type of edema, of itself, presages no serious import but in the massive type presents a rather awesome appearance. The conjunctiva is seen to roll out between the lids, principally from the lower cul-de-sac, from canthus to canthus, and often equals the diameter of a 16-gauge gun cartridge. It is boggy in consistency, and pink in color in the early stages becoming purplish and more indurated after a few days from exposure and disturbance of circulation. It is somewhat more sensitive to touch than the normal conjunctiva. It can be reduced after a few moments' pressure with the balls of the fingers but will promptly regain its original status upon release of pressure. In some cases it is rather persistent and when extremely large should be protected from exposure by a firm occlusion dressing after reduction beneath the lids and the lids approximated over it and either held tightly closed with adhesive strips or by suturing the upper and lower lids together. This usually results in prompt return to normal along with subsidence of the causative factor. If not reduced in the early stage the edema progresses rapidly. Occasionally small multiple punctures of the edematous mass become necessary to lessen its progress. Ice water compresses are of some benefit with topical applications of adrenalin chloride to the edematous mass.

A discussion of the condition is presented mainly because of the fact that the writer has noticed the

frequency with which it occurs in the Negro race as compared to the white race under similar causative agents. No definite explanation can be given for the frequency of its occurrence in the one as compared to the other save on the basis of the writer's viewpoint that the normal lid structures of the Negro appear more flaccid, particularly the conjunctiva, and the retro-tarsal folds more full than in the white man, which would cause these structures to more easily lend themselves to edema.

RHINO-OTO-LARYNGOLOGY

CLAY W. EVATT, M. D., *Editor*, Charleston, S. C.

NOSE BLEED

IN the treatment of nosebleed one must first attempt to locate the bleeding point. There are four areas corresponding to the four types.

First—Kesselbach's area, the vascular area, on the anterior part of the septum. Bleeding here is from capillary fragility, more frequently occurring in the juvenile and the plethoric.

Second—The divisions of the internal branch of the sphenopalatine on the middle part of the septum above and posterior to first-mentioned area. Bleeding here is due to fragility of the arterioles accompanied by arteriosclerosis. This is the epistaxis of the fifties accompanied by hypertension and favored by the abuse of alcohol and tobacco, syphilis, and the high-pressure type of living at this age when the pace should not be pressed to the breaking point but rather a slackening up of exertion should be begun.

Third—The branches of the sphenopalatine may bleed following a surgical or electrosurgical procedure.

Fourth—The entire mucosa may give rise to a diffuse bleeding as in the general hemorrhage of the hemophilic.

These four areas are listed in the order of their increasing gravity.

1. The first or juvenile type is benign but annoying. It comes on more frequently during the day, from a slight wound or effort in coughing or more often from no discernible cause whatever. The bleeding is anterior and seen without the speculum. It may be controlled by the use of styptics, astringents, or coagulating sera in the form of solutions, powders, or crayons applied to the bleeding points. Cold compresses applied at intervals to the face promote clotting. Simply pressing the alae nasae between finger and thumb is frequently all that is necessary.

2. Epistaxis of the fifties is serious and may become grave. The bleeding point is usually hidden but may be located above and behind Kesselbach's area. Rarely the bleeding may be anterior in which

cases it is from a branch of the nasopalatine. This nosebleed usually comes on late at night during the period of relaxation of the sympathetic tonus. The flow is often abundant and may persist for several hours, then the clot fills the fossae and the bleeding seems to stop; but serum exudes in front and a fine thread of blood forms behind. The bleeding exhausts itself and in a few days reappears. This hemorrhagic crisis lasts sometimes eight to ten days then stops. Sometimes it returns in a few years, sometimes never. The immediate or emergency treatment is packing. Salt pork may do the trick. Vaselineized one-fourth or one-half inch gauze is good. Frequently packing from the front will be sufficient, but in some instances post-nasal plug combined with packing anteriorly is necessary. The packing should be left in place one to three days. A cool room and quiet surroundings are helpful. Relaxation of the patient is essential. Plenty of morphine until the hemorrhage is checked followed by barbiturate sedation for several days with reassurance and psychotherapy is fundamental. The patient and physician must be calm. Transfusions may cause recurrence.

Preventive or later treatment is to sclerose the vascular area along the septal artery or about any points that seem to have been bleeding.

3. Surgical epistaxis may be grave or even fatal. The bleeding may be on the inner side back up and high on the septum or on the external posterior part of the fossa.

It rarely appears during the operation but is more likely some hours later after the anesthetic and adrenaline effects have worn off. It may appear eight or ten days postoperative when an eschar comes off. This hemorrhage is mostly posterior therefore lots of blood may be vomited.

Treatment is packing even at the risk of otitis. In severe cases, there are the waxy skin, purple lips, cold extremities, rapid weak pulse and respiration—all the symptoms of shock. Small repeated transfusions may be helpful. If the carotid is tied it must be remembered that within twenty-four hours anastomosis renders this ineffective. Therefore the bleeding point must be packed off or tied off if possible.

4. Epistaxis of all the mucosae—epistaxis of the hemophilics—is the gravest nosebleed. There are sooner or later, all fatal.

1. Bleeding of the hemogenic type comes on spontaneously and is characterized by a prolonged bleeding time. Coagulation is of poor quality. The blood is deficient in color, watery with reddish threads and the clot is blackish, soft and weak. The cause is unknown. It usually affects women, is not hereditary, and the liver and splenic factors

are considered at fault. In this type vitamin K may prove of value. The bleeding is not very abundant, lasts twelve to twenty-four hours, and recurs every few weeks or months. Purpura may be present and petechiae must be searched for on the turbinates and posterior choanae as the recognition of purpura is important.

2. Traumatic expistaxis of hemophilia—True hemophilia is characterized by a prolongation of coagulation time, indeed the process is never complete. The trouble is hereditary—affecting the males and transmitted by the females. The bleeding is not spontaneous but the wound is often minimal. The prognosis is grave and sooner or later the patient succumbs to a more severe crisis.

3. Mixed type hemophilic-hemogenic—A grave type, often fatal. Treatment is tampons saturated with horse serum, snake venom, or other coagulant sera. Human serum may be used by injecting 20 c.c. of blood under the skin of the abdomen. Multiple transfusions help. All results are transient. They rarely reach maturity.

Fresh beef liver vitamins C and K, various sera, splenic radiotherapy and transfusions are the straws at which we grasp.

Epistaxis, Traitement des; by R. A. Allilaire et J. Labaile; *La Presse Medicale*, Dec., 1940.

DERMATOLOGY

J. LAMAR CALLOWAY, M.D., *Editor*, Durham, N. C.

DERMATITIS HERPETIFORMIS

DERMATITIS HERPETIFORMIS is one of the most difficult therapeutic problems with which the dermatologist has to cope. For matters of prognosis and treatment, pemphigus, erythema multiforme, drug eruptions, and the various "id"s, should be eliminated. The diagnosis as a rule can be established when all or most of the following postulates are fulfilled.

1. Grouped vesiculo-bullous eruption involving the body in a symmetrical distribution, avoiding the mucous membranes as a rule.
2. Intense pruritus.
3. Pigmentation.
4. Flare-up following ingestion of iodides or bromides.
5. Positive patch test to 50 per cent potassium iodide.
6. Chronic course with exacerbations and remissions.

Many theories have been advanced as to the etiologic factor responsible for dermatitis herpetiformis and they may be divided into five main classes; amely, infectious, toxic, virus (neurotrophic), endocrine and bacterial allergy (Callaway

and Sternberg). No single theory will completely explain all cases.

Many forms of therapy, including arsenic, chromium sulfate, germanin, fever therapy, intravenous sodium thiosulfate etc., have been used in conjunction with local therapy with varying results. The following is a treatment regimen which we have found helpful:

1. No medications containing iodide or bromide should be used.
2. Iodized table salt should be avoided.
3. Careful removal of all foci of infection. This requires careful x-ray study of lungs, sinuses and teeth, and careful examination of the naso-pharynx, urological and gynecological systems.
4. Culture of infected foci with preparations of autogenous vaccine and bacterial desensitization.
5. Local antipruritic lotion such as calamine lotion with 1 per cent phenol may be used to allay the itching.
6. Starch baths, sulfur baths etc. may be used in conjunction with local antipruritics.
7. The various sulfonamids, carefully controlled administration of arsenic, and other special forms of treatment should be used only in the hands of experienced physicians.

Administration of vaccines deserves some attention and the technique used is outlined below. The patient is tested for sensitivity to the various organisms by injecting 0.1 c.c. of the saline suspension intracutaneously. If either an immediate wheal appears or a delayed tuberculin-like reaction after 24 hours, the patient is considered to be sensitive. The organisms to which the patient reacts are then mixed together and diluted 1:10, 1:100, 1:1000, and in certain cases 1:10,000.

The administration of the vaccine is begun with the highest dilution, the patient receiving 0.1 c.c. subcutaneously at the first injection. This is followed by 0.2 c.c. 48 hours later, and the dosage is increased 0.1 c.c. every 48 hours until 1 c.c. dosage has been reached. Then the next most concentrated dilution is begun at 0.1 c.c. and is administered as outlined above.

If at any time the patient shows any increase in temperature or marked erythema at the site of injection, the vaccine should either be diluted or the dosage in the same dilution significantly lowered, and the vaccine begun again observing the same precautions as before.

CHLORAL HYDRATE risk has been overrated (C. F. Obermann, in *Jl. Iowa Med. Soc.*, Oct.); it remains one of the most reliable of sedative agents. It is administered by mouth or rectum in amounts up to 45 grains, 15 grains being the average adult dose. It acts within 15 to 20

minutes. Usually there are no ill after effects. Tolerance and cumulative effects are minimal. Although not common, habituation may develop, and may result in symptoms similar to those of chronic alcoholism.

CARDIOLOGY

C. M. GILMORE, M.D., *Editor*, Greensboro, N. C.

EXPERIMENTAL SURGERY IN CORONARY ARTERY DISEASE

THE WORK of Claude Beck and his coworkers in Cleveland, in the past few years, as reported¹ recently, has made two major contributions in the field of heart disease. One is in new concepts of the coronary circulation; and the other is hope in the future of heart surgery.

Work on the dog has shown that local ischemia of the heart muscle is far more dangerous than marked reduction of the total coronary flow. If the coronary artery be pinched off almost completely at its origin, this is far better tolerated than the ligation of a few peripheral arteries, where a local ischemic area becomes a trigger mechanism to set off ventricular fibrillation. Obviously then, the production of communicating arterioles among the various coronary artery branches should be of great benefit in an occlusion, by distributing over the entire myocardium the shock of a sudden local ischemia. This verifies the clinical impression that a coronary occlusion is less likely to be fatal in a patient who has previously had anginal syndrome, and whose coronary sclerosis has forced the production of collateral circulation.

In the first article the authors report on the effect of abrading or scraping off the epicardium in dogs. It is believed that the epicardium presents a barrier to intercoronary communications. The heart was first abraded to remove the epicardium, and two weeks later, the descending ramus of the left coronary artery was ligated. A series of control dogs had the ligation without the abrasion. By postmortem injection of the coronary arteries, it was shown that abrasion was effective in producing intercommunication. In treated dogs the infarct was smaller, or was prevented altogether. In some of the dogs infarcts developed which certainly would have been fatal in normal dogs, but their lives were saved by the coronary intercommunications.

An incidental finding on surviving untreated dogs was that coronary occlusion in itself is an effective stimulus to the development of intercoronary channels.

Beck, in his article, discusses the accomplishments of his experiments on dogs and humans.

1. The Effect of Abrasion of the Surface of the Heart upon Intercoronary Communications," by Stanton, Schilit and Beck; "Coronary Operation," by Beck; both in *The American Heart Journal*, October, 1941.

Apparently there are three means by which surgery can help the human heart suffering from coronary sclerosis. One is by means of abrading the epicardium. Another is by causing inflammation of the heart surface by the introduction of an element, such as dried bone, into the pericardial sac, and thus producing arterial intercommunications via granulation tissue. The third method is by the introduction of an outside blood supply, either by the internal mammary artery, the triangularis sterni, or any other tissue—the specific tissue used making no difference. Beck cites the marked improvement in the human patients operated on as proof of the effectiveness of surgery. He emphasizes, however, that this work is still in the early experimental stage, and much more work will have to be done before operations on the heart become practicable as a general therapeutic procedure.

GENERAL PRACTICE

WALTER J. LACKEY, M.D. *Editor*, Fallston, N. C.

THE CHOICE OF ANESTHETICS

THE conflicting claims of advocates of various anesthetic agents confuse many of us. Here is the gist of an article¹ which sets forth the indications for different drugs of this class in an apparently fair way.

Ether is the most reliable anesthetic agent for relaxation. When other agents fail to relax, ether is drafted into service. Since its early introduction in anesthesia, ether has never failed in being utilized for overcoming the shortcomings of other methods. Ether still occupies the position of the most extensively used agent in spite of its great handicaps. However, the contraindications for the use of ether are many and should be observed. These are flammability, idiosyncrasy, respiratory disturbances, renal diseases, atheromatous vessels, and old age.

Chloroform is an excellent anesthetic for relaxation, especially in obstetrics; contraindications are anemic patients, status lymphaticus, prolonged operations, diabetes, diseases of the heart, liver and kidneys.

Vinethene is of greatest value when rapid, easy induction and prompt recovery with a minimum of postanesthetic effects are especially to be desired. Administered by the open-drop method, it is especially useful to produce light anesthesia when unconsciousness and freedom from pain are more important considerations than muscular relaxation. Vinethene may also be used with oxygen to supple-

ment the gases, especially nitrous oxide and ethylene. The explosive and fire hazards of vinethene are just those of ether, ethylene, cyclopropane, ethyl chloride. Due to its high volatility, vinethene must be added continuously to the mask during induction and maintenance, when using the open-drop method; the tip of the dropper must be kept only one inch from the mask. Any mask suitable for open drop anesthesia may be used, covered either with stockinet or with eight to 10 layers of coarse gauze. Protect the face with cold cream. Usually the patient loses consciousness within one minute. For a few seconds, allow the mask to fit loosely and administer vinethene slowly. Then gradually increase to a rate of from 40 to 60 drops per minute. Changes in depth of anesthesia occur rapidly and skill is necessary to maintain an even level of anesthesia. The signs of vinethene anesthesia differ from those of ether anesthesia and experience in the use of vinethene is required in order to obtain optimal results. In the third stage, respiration becomes regular, quiet, and increased in volume, the eyeball is fixed, and the pupil may dilate as in deep ethyl ether anesthesia. Full recovery from deep vinethene anesthesia usually occurs in a few minutes. When intercostal activity has been abolished, the patient is in the fourth plane of surgical anesthesia. This plane of anesthesia should be avoided. Should respiratory arrest occur, remove the mask, be sure of a patent airway, immediately institute artificial respiration and administer oxygen. Response and recovery are usually quite prompt. When using vinethene in a machine, it should be vaporized with oxygen. It may be administered simultaneously with nitrous oxide or ethylene in order to obtain greater muscular relaxation. When using vinethene with ethylene or nitrous oxide, at all times allow a supply of oxygen sufficient for good color. If respiratory arrest occurs with vinethene, cardiac arrest will follow in two and one-half to three minutes. With ethyl chloride, cardiac arrest follows respiratory arrest immediately. Vinethene should not be used in the presence of cautery or flame, it is contraindicated in diseases of the liver, cardiovascular system, renal insufficiency and for old patients. Cyanosis should never be tolerated.

Ethyl chloride is a fair agent for procedures requiring not longer than five minutes, excellent for induction in ether anesthesia. Contraindications are the same as those for chloroform. It should not be used where muscular relaxation is necessary.

Nitrous oxide is the most popular of the gas-anesthetic agents. It, as well as oxygen, is non-inflammable, but will support combustion. It should not be used where relaxation is necessary, in advanced tuberculosis, valvular heart disease or

1. G. J. Thomas, Pittsburgh, in *W. Va. Med. J.*, Oct.

where there is obstruction to the air passage. Patients that are muscular, athletic, alcoholic, and with high metabolic activities take it poorly.

Ethylene gives better relaxation than nitrous oxide but not as good as certain other agents. Oxygen can be doubled with ethylene. Ethylene is contraindicated when flame or cautery is to be used.

Cyclopropane is suitable for chest surgery because of high oxygen concentration. When helium is not added to the mixture, is highly explosive. It is contraindicated in cardiac diseases. Epinephrine should not be used during cyclopropane anesthesia, as its use may lead to ventricular fibrillation.

Intubation anesthesia. Once intubation has been performed, the margin of safety to the patient is greatly increased, provides an immediate and effective means of artificial respiration.

Rectal ether has its place in surgery, especially in obstetrics.

Barbiturates and avertin by rectum are useful to avert the psychic shock that patients may experience when being transported from their bed to the operating table. Massive dosage of these drugs administered at one time frequently prove fatal. Of the barbiturates pentothal sodium is superior. Preliminary medication is essential for all anesthetics, especially with the intravenous barbiturates. Opiates and atropine relax and prevent the formation of mucus.

The dose, by intermittent technic, must be adjusted for each patient. Venipuncture is performed after the skin has been surgically prepared. Three c.c. of 4 per cent solution is injected through a period of 10 seconds, stop to permit complete effect to appear—10 seconds. Pause following the injection of each two or three c.c. of the drug. If relaxation is not sufficient, an additional two or three c.c. can be injected at the same rate as in the beginning. The air passage must be patent.

If respirations are extremely depressed, oxygen or a mixture of oxygen-carbon-dioxide may be administered by means of nasal adaptors or catheters.

Accumulated effect may manifest itself very suddenly. Evidence of recovery is an indication for additional one to two. Not to be employed when there is any mechanical interference with the respiratory function, severe myocarditis or disease of the liver or kidneys.

Local and block anesthetics have a definite place in surgery. The contraindications are patient's idiosyncrasy to epinephrine, novocaine, cocaine, or their derivatives.

Spinal anesthesia is a valuable adjunct in surgery. It is being used with satisfaction in opera-

tions involving the chest and regions below the diaphragm. Contraindications are extensive cardiovascular disease, brain tumor, syphilis and shock.

RADIOLOGY

HILMAR SCHMIDT, M.D., *Editor*, Petersburg, Va.

SUBACROMIAL BURSITIS

THE PATIENT complains of a painful shoulder. The history is rather vague. He thinks he may have injured it. If so, the injury was slight, such as we all suffer and forget immediately. Only in this case, the pain develops and persists. There is no swelling or redness and no outward visible evidence. Even pressure may show no tenderness, and pain may only arise from motion of a certain pattern.

When roentgenograms are taken, a calcareous deposit typical of subacromial bursitis may be observed in the region of the bursa near the greater tuberosity. It is frequently necessary that the arm be rotated to bring this deposit into view on the film. The deposit may be a single mass or multiple small masses.

Until recently no method of treatment has proved satisfactory. Drugs to ease pain do not reach the cause. Liniments, to use an old textbook phrase, are mentioned only to be condemned. Heat in the form of various physical therapeutic measures has helped, but it is tedious as well as uncertain. Surgery has been used as a last resort.

Now x-ray treatment is being used because the rays are able to penetrate the deep tissues, and because they have definite effects on these calcium deposits. These results are carefully discussed and evaluated in two articles^{1,2} in *Radiology*.

Whereas the average period of disability for physical therapy was 50 days, these authors find a disability of only 10 days under x-ray treatment.

Here as in all other therapy, careful selection of cases is needed. In the acute cases with early calcification, or even before calcification can be shown, response is reasonably prompt and satisfactory. In the chronic cases in which fibrotic changes have taken place improvement is prone to be slow and limited.

1. Baird, L. W.: Roentgen Irradiation of Calcareous deposits about the shoulder. *Radiology*, Sept.
2. Klein, L., and Klemm, T. S.: Treatment of Peritendinitis Calcarea in the shoulder joint. *Radiology*, Sept.

INTESTINAL INFESTATIONS

(H. M. Davison, et al., Atlanta, in *Jl. S. C. Med. Assn.*, Nov.)

It seems probable that a fair percentage of our local population is suffering from some form of intestinal infestation.

It seems wise to suspect intestinal parasites as a possible cause of symptoms not otherwise explained.

In suspected cases, diagnosis seems best obtained by examining one or more stools voided in the usual manner and at least six stools voided in the office following a saline laxative.

THERAPEUTICS

J. F. NASH, M. D., *Editor*, Saint Pauls, N. C.

DIAGNOSIS AND TREATMENT OF VESICULAR ERUPTIONS OF THE HANDS AND FEET

EVERY general doctor is consulted about vesicular eruptions on the hands and feet. Here is presented in abstract an article¹ from which profit may be derived.

Common dermatoses are presented all too rarely for dermatological discussion. The simplest type of cutaneous reaction consists of erythema, edema, vesiculation, oozing and crusting of the eczema-dermatitis venenata syndrome. The eruption appears on the dorsum of the fingers and hand in the form of closely studded vesicles, usually extending from the finger nails to a line on the wrist. The palms are usually involved only after the disorder has become subacute or chronic. The reaction is due to the existence of epidermal allergy, which can be demonstrated by the positive patch test. The condition is often occupational or industrial.

Epidermal allergy is also present in the eczematous variety of fungous infection.

Vesicular dermatomycosis of the soles is not unusual, especially during the summer. Examination of an untreated vesicle reveals a large number of hyphae in its roof.

Conditions which must be considered from the standpoint of differential diagnosis of vesicular ioderma are the two varieties of dermatitis repens, the acrodermatitis continua and the infectious types, respectively, and vesiculo-bullous second-degree burn.

By far the greater number of vesicular eruptions of the hands and feet may be included in the group referred to as idiopathic dyshidrosis, pompholyx, recalcitrant eruptions of the palms and soles, bacterids, pustular psoriasis, relapsing phlyctenular dermatitis of the extremities, toxic dermatitis and perhaps have been given even other names.

The only vesicular eruptions the author has seen which convinced him that bacteria were causative have been those of infectious eczema, where their products reach the skin from the outside.

Vesicular fungous infection of the hands is almost unknown. Fungous infection of the feet occurs in 30 per cent of patients with vesicular eruptions in a clientele, comparable to that seen in private practice in the North. In private practice in

the warmer South and in dispensary practice in the North where a higher percentage of organic dermatoses is seen, the incidence of true fungous infection is higher. Non-fungous vesicular dermatoses may mimic the picture of true fungous infection so closely that clinical differentiation is impossible.

Never make a diagnosis of fungous infection without finding the fungous hyphae in potassium hydroxide preparations or on culture. Never make a diagnosis of vesicular dermatomycid of the hands unless the fungous infection of the feet is of the vesicular variety, signifying epidermal allergy.

After any acute irritation has been relieved by potassium permanganate wet dressings and soothing ointments, the entire area is painted with benzol containing two per cent of iodine, which is allowed to dry and the feet well powdered with a dusting powder composed of equal parts of tannic acid, boric acid and zinc oxide. On the following day a salicylic acid-sulfur ointment is applied morning and night. The initial percentages are two of salicylic acid and three of sulfur, which are gradually increased if tolerated up to five and six, respectively.

If fungi are not found in vesicles of the hands or feet, treat the patient according to the principles of therapy for functional disease including rest, ultraviolet irradiations and sedation in addition. After any acute irritation has been relieved by potassium permanganate wet dressings and soothing ointments, White's crude coal-tar ointment, 5 per cent, is the most efficacious treatment for restoring normal keratinization cycle.

SYMPTOMLESS PERIOD OF BRONCHIAL FOREIGN BODIES

WE grow lots of peanuts in this section and have our share of cases in which they get into a bronchus. For that reason, and because it is one of the rare, rare, articles which advises that the family doctor be consulted, this F. D. abstracts it.

Soon after the aspiration of a potentially lethal foreign body, there nearly always ensues a symptomless period, during which the significance of an occasional wheeze or cough may be overlooked. More often than not the family doctor is not consulted during this period, but it is not unusual to hear that a physician acquaintance, whose special field of endeavor is far removed from consideration of chest complaints, has been quizzed casually on the street. Thus he is made to share some responsibility with no opportunity of conducting an examination or even obtaining an adequate history.

A peanut is one of the most dangerous and unfortunately common bronchial foreign bodies. Why is a child without molar teeth given peanuts?

1. S. W. Becker, Chicago, in *Neb. Med. J.*, Dec.

1. Paul Bailey, Portland, in *Northwest Med.*, Oct.

Contrary to lay opinion, less than 3 per cent of bronchial foreign bodies are coughed out again. Neither do the peanuts disintegrate or "digest" in the lung. Peanut kernels are usually angular and during the symptomless interval after aspiration the air passes by during respiration. During this period the examiner may hear one or two nondiagnostic rales at the lung base.

The all important and usually the only sign at this state is elicitation of an asthmatoïd wheeze at the end of forced expiration. This wheeze is heard with either the ear or the stethoscope bell at the open mouth. It is clearest after secretion is expelled by coughing. The mechanism of production is probably the passage of air by the foreign body as it narrows the bronchial lumen. Presence of this wheeze always suggests bronchial foreign body and, if reported by the parents at the curb-stone consultation, dictates a policy of viewing with alarm. Advice to hasten to their family doctor for immediate examination and continued observation should be given.

If a peanut kernel is present, it will make its presence known in no small way and probably soon. Nuts are extremely irritant to the bronchial mucosa and they rapidly induce annular mucosal swelling. Soon the airway is obstructed, at first during expiration only.

SURGERY OF THE OLD

WE tend to neglect having our old patients operated on except in emergencies. The article¹ of which abstract follows presents the subject in a way to be helpful to the family doctor.

A dissipated man of 35 years is a much greater surgical risk than the well-preserved patriarch of 80. A redistribution of physicians will be necessary when more of our elderly patients settle in the South. The chance of dying of cancer in one in nine for white males and one in seven for white females.

The visit to older patients should never be hurried; rather it should be casual as though he were being honored. It is well to discuss events of common interest; an evening at dinner in the home will give the patient something to anticipate.

Upon admission to the hospital the personnel should be instructed not to alter the patient's usual routine except for real reason. The surgeon should explain to these patients the results of the examinations and what is to be done at operation. Bed rest and abrupt curtailment of previous habits usually do more harm than good. Probably because of the feeling that most of his life lies behind him, the older patient has fewer worries than the active younger man and accepts operation with more

tranquillity when in the proper frame of mind.

The criteria for surgery in these aged people are:

1. Is surgery essential to save the patient's life?
2. Will operation remove the physical disability and restore the patient to his more or less normal status?
3. Will it effect a cure of a malignant disease?

An estimate should be made of the cardiac reserve. A good rule of thumb for such patients is whether or not they can walk with ease around the block. Many of these patients have chronic bronchitis and bronchiectasis which militate against surgical procedures.

Complications following cholecystitis in the aged are very poorly tolerated, and postponing surgery because of age alone is to be condemned.

Many of these patients have a low-grade prostatic obstruction which will become an immediate postoperative problem. A long-standing nephritis may be revealed in the preoperative studies and measures directed to the correction of this condition.

A routine blood chemistry examination should be made, and the blood placed in as nearly normal status as possible by fluids by vein, blood transfusions, vitamin therapy and adequate diet. Preoperative medication should be minimal, opiates used sparingly.

For this group of patients we prefer regional block supplemented by an inhalation gas for anesthesia. If the hemoglobin is less than 50% spinal anesthesia should not be used.

Because old people react adversely to long-continued annoyances it is better to avoid multiple-stage operations.

Measures should be taken to prevent shock, therefore, by administering fluids by vein, and blood transfusions. Suprarenal cortical extract given to elderly patients before and after operation will aid in preventing shock and help buffer the strain on the vital organs. The blood should be given slowly.

Immediately after operation the patient should be given oxygen for 100 minutes and should have hyperventilation with a carbon dioxide-oxygen mixture every hour for the first 24 hours. At no time is pitressin to be given because it produces coronary spasm.

Patients having diseased hearts must be given fluids slowly, in small volume, preferably in isotonic solution. The danger of excess fluid far outweighs that of inadequacy for a period of two or three days after operation.

As soon as the danger of secondary shock is past, these patients should be encouraged to move about freely in bed, to sit up in bed, and to be up

1. E. L. Strohl, Chicago, in *Ill. Med. J.*, Nov.

in a chair on the 2nd, 3rd, or 4th day. A Balkan frame and a trapeze attached over the bed allows more freedom of motion of the extremities.

Members of the family should call upon the aged patient early. The danger of excitement is minimal and is offset by the optimism created.

This Chicago doctor's conviction that there will come a time when all old folks will live in the South is awakening. It's a new idea to this commentator; but a very welcome one, to whatever degree it may turn out to be accurate prophecy.

The article shows an intimate and considerate acquaintance with the problems of declining health incident to advance in years.

HOSPITALS

R. B. DAVIS, M.D., *Editor*, Greensboro, N. C.

DON'T LET THE PUBLIC DECEIVE YOU

IT IS COMMON knowledge that people frequently say what they don't mean and mean what they don't say. This seems especially true of an upset and disturbed public such as the hospital folks usually come in contact with. The more disturbed the mind, the more unreliable the tongue. Trustees, Directors and Staff alike must recognize this fact if their institution is to keep pace with the times.

In my twenty-six years of practice I have never had the relatives of an injured or sick individual to request that the patient be given next to the best or third from the best treatment possible; but rather, they demand that the patient have "the best" of medical and nursing service. In the well operated institution this is what they should and do get.

It is obvious that, for best treatment, best equipment in personnel and materiel is required. Neither of these can be had without a high expenditure to someone. It is just that the people who receive the benefits of such expenditure pay for them. It is the sick man who receives the benefits of the services of a well trained medical man and of a well equipped hospital. This being the case, "chickens will come home to roost" and he must pay the bill; unless, however, he is clever enough to get someone else to pay it for him or is far-sighted enough to carry sickness insurance. This simply means he gets a group of well people to help pay his bill and when he is well again he, in his turn, contributes to meet the expenses of some other person's illness.

One can not blame the sick individual for wanting the best that medical science can give. One can not blame the sick individual if he demands that the hospital be equipped so that the well trained physician may have all the facilities

necessary to render the best treatment. Conversely, one should not blame the hospital and the physician for demanding, in return, a fair remuneration. This remuneration is, of necessity, higher than many other services rendered because of the terrific cost attached, both for educational preparations for rendering the service and the necessary newer expensive instruments purchased by the hospital. This fact must be put over to the public by word of mouth, through the press, and over the radio. Once it is done, there will be considerably less fault-finding with charges made by hospitals and physicians. Every institution should welcome criticism; but, be it remembered, criticism is honest, intelligent evaluation, not, as most seem to assume, abuse born of ignorance and saturated with selfishness. The only practicable remedy is an educational campaign to convince the public that they only pay for what they demand. This is a free country today, thank God, and I hope it will be tomorrow. Patients are entitled to have what they want, if in having it, the rights of their neighbors are not infringed upon; but it is equally a democratic spirit that once the individual has what he wants, he must remunerate someone for it.

I was interested a few years ago in a discussion of advertising at a meeting of the American Hospital Association. Some hospital authorities present said that three per cent of the gross income of the institution was not too much to spend for the purpose of enlightening the public. It is the writer's opinion that five per cent is not too much. The average hospital has lighted its candle and put it under a bushel and so it has limited its own usefulness. Next to the church, the hospital should be enterprise number one in any community. Let us strive to put the hospital in that position and exert sufficient effort to hold it there.

The title of this paper and its text may be boiled down in a summary: The public does not want poorly trained doctors or poorly equipped hospitals, but they would lead you to believe that they are not willing to pay for the services of well trained physicians and well equipped hospitals. If they knew the exact cost of every service rendered, prior to its being rendered, they would still demand it and be willing to pay; but we have denied them the educational advantage necessary for them to know what a fair hospital fee is. It is our fault that this has been allowed to go on so many years. It should not be classified as egotistical or unethical for the physician and the hospital to seek to put before the public favorable, enlightening and fair information on the costs of good medical and hospital services, so that all the people may see that such services can not be rendered unless for adequate compensation.

HUMAN BEHAVIOUR

JAMES K. HALL, M.D., *Editor*, Richmond, Va.

A MEDICAL ITINERARY

I reached St. Louis on the day before the annual meeting of the Southern Medical Association. Physicians from North Carolina had a large part in the meeting. Dr. Paul H. Ringer, of Asheville, occupied the presidential chair, and Dr. Hamilton W. McKay, of Charlotte, made the report of the Council. The assemblage was large, and the program was comprehensive and excellent. The commercial exhibits were varied, informative, and so influential, I surmise, that passage into and out of the great Municipal Auditorium was made through side and rear doors, necessitating, by the members, serpentine and sinuous approach to the meeting-halls through the myriad exhibits. Most of us doubtless learn more easily and quickly by visual information. The commercial exhibits are educative. No physician can successfully practice medicine without making use of chemicals, mechanisms and other material aids. But there is no doubt that the commercial exhibits, located as nearly as possible within the meeting-halls, distract many members and hold them from attendance upon the sessions. No medical society should allow any number of exhibitors to exert a distracting influence, or to develop the notion that the society can not finance its own affairs.

At the meeting in Richmond last May of the American Psychiatric Association, I found it impossible, on the first day, to pass from Main Street to the large auditorium of the Jefferson Hotel, for the simple reason that the door of the auditorium was locked. The exhibitors had caused the door to be locked, so I was told. The pathway to and from the auditorium was walled on either side by exhibits.

On the last afternoon of the Southern's session, I journeyed by bus, more than a hundred miles west of St. Louis, to Fulton, and there I spent a busy and a pleasant day with Dr. J. R. Busch, the superintendent, in visiting the State Hospital. The institution, opened more than a century ago, was the first hospital for the mentally sick west of the Mississippi. The grounds are spacious, the buildings substantial, and I was impressed by the quietness and the home-like atmosphere of the Hospital. I heard there what I heard at all other state hospitals I visited: of the too small medical and nursing staffs, of the withdrawal of many of the personnel into the defense service, and of the want of money with which to do many needed things.

In journeying from the city to the State Hospital I passed near the last home and the first burial-place of Daniel Boone. Not far away, at

Florida, Missouri, Mark Twain was born; and some miles farther on General Pershing's birth has lent prestige to a village.

My visit to Fulton was followed on the next day by a call at the City Sanitarium. The institution does the work of a state hospital for the City of St. Louis, and I feel that the work is well done. In the office of the Superintendent my attention was instantly caught and held by the bust—two of them—of a distinguished-looking man. I was told that a mentally sick man, many years a patient, carved one of the busts from a block of mahogany and the other from a block of walnut. Though the patient had been a diemaker, he had never before attempted to carve out a human head. He had never seen the former Superintendent but, by the use of photographs, the carver had evoked from the two blocks of wood a perfect likeness of the dead physician. When the sculptor came, at my request, to talk to me about his work, he had little to say, except that he could not understand how he was able to do it. In the State Hospital at Morganton there should be such a representation of Dr. Patrick Livingston Murphy, and at Dix Hill at Raleigh such a likeness of Dr. Albert Anderson. The artist-patient remarked, in response to my question, that if he had the proper photographic views of their faces he would do his best to carve for me a bust of each of them. Dr. Frank M. Grogan and Dr. Louis H. Kohler, as Superintendent and as Assistant, direct the work of the City Sanitarium.

I could have spent the entire day in the hospital pleasantly and profitably, but Dr. E. F. Hocter, the Superintendent of the State Hospital, had invited me to visit him; and Dr. Norbert J. Publis, resident physician of the Sanitarium, afforded me comfortable transportation and delightful companionship for almost a hundred miles down into Missouri's Ozarks. I could not imagine what the enormous mounds of earth-looking material were. Dr. Busch informed me that we were passing through a lead-mining region, and that the great mounds represented waste from the mines. Dr. Hocter, Superintendent of the State Hospital at Farmington, is a ruddy, boyish-looking, energetic, delightful bachelor, but he told me that he was old enough to have participated in the first World War. His institution, like that at Fulton, is near a small town, and each has extensive grounds and that serenity that goes with such a location. Dr. Hocter spoke of his institution as being a group of cottages. I found out that he meant that few of the buildings have more than forty patients each, and some buildings even fewer. Neither buildings nor patients are crowded. The institution constitutes a sort of psychiatric village. Dr. Hocter

seemed to take Dr. Publis and me throughout the entire Hospital. Yet I saw no wild behaviour, I heard no outcries, and I saw no barred windows. When I remarked about the invisibility of the stays and restraints, Dr. Hoor thought dusk was interfering with my vision. He laughingly remarked that occasionally a patient eloped; but that sometimes there was penitential return and a request for readmission.

The night was far-spent when we set forth on our return from Dr. Hoor's hospitable hospital home to St. Louis. Dr. Publis, young, vital, optimistic, buoyant, was wondering whether to devote his professional life to psychiatry or to so-called internal medicine. I was thinking of him, too, his youth; of the vast, fertile, slightly-populated mid-West, and of its youth, too, and of its possibilities. I found myself wondering if the lead being mined in southern Missouri would have to be shot into the vigorous bodies of young Europeans and Asiatics, could they be settled in a country so fertile and so responsive to cultivation as our great mid-West and West. Men pick up their guns and begin to fight each other, perhaps, when their gastrointestinal tubes are empty, and when they step on each others' toes because they are crowded.

As we looked upon the distant glow of the City's night-sky, I recalled that Mark Twain and Tom Sawyer and Huck Finn and the Negro, Jim, were born in that region, and that they have become numbered amongst the world's immortals. And I remembered that Colonel Robert E. Lee was assigned, about a hundred years ago, to St. Louis, to fix the banks of the Mississippi; that Dr. William Beaumont there made some of his observations on the gastric activity of Alexis St. Martin. I recalled having once visited, just across the Mississippi, the cabin on the plantation of his father-in-law occupied by the General Grant to-be, following his forced resignation from the United States Army because of drunkenness. The Civil War reclaimed him and pedestalized him. And I visited, too, the old three-story brick house, in a no-longer-desirable neighborhood, in which Eugene Field was born. I think I should have preferred his life—poverty, tuberculosis, alcoholism, and even too-early death—rather than the life of any of the dignitaries I have named. Eugene Field was enabled to give us *Little Boy Blue*; *Wynken, Blinken and Nod*; and *When Willie Wet the Bed*, and *Seein' Things* because he remained always a child for children. He must have been writing with autobiographic, alcoholic fidelity in *The Snakes that Rowdy Saw*, and in *The Clink of the Ice*.

Abraham Lincoln, on Grant's Illinois side of the River, must have brooded in melancholy, even

though his wife had not been psychopathic, for he was, also. He and Mark Twain failed to cheer themselves in establishing themselves as immortal jesters.

The journey has barely begun. Shall there be other chapters?

HISTORIC MEDICINE

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND ITS RECENT BOMBING

(A. P. CAWADIAS, in *Proceedings of the Royal Society of Medicine*, October)

ONE NIGHT in November, 1940, a high explosive bomb fell through a skylight in the library of the Royal College of Physicians. The College had already been damaged in October, but the November hit was the more destructive. Half the library was open to the sky, the floor at the point of penetration was found to be sagging; the blast blew the glass from the bookcases, and hundreds of books were scattered. Fortunately precautions had been already taken for the most valuable books. Among the remainder there was surprisingly little damage.

With the assistance of the Royal Society of Medicine's staff the staff of the College were able to remove the volumes, which were sent to the Secretary's house to be stored. They were removed just in time to save them from damage by heavy rain.

The books were saved, and some of them are those that survived also the Great Fire of 1666.

College in Roman law means corporation, and the object for which colleges or corporations of physicians were formed in the early Middle Ages was the regulation and administration of medical practice. The College of Physicians of Rome in the very early Middle Ages was composed of a dozen doctors, all of genuine Roman family and education, who exercised a kind of surveillance over all who professed the art of curing—physicians, barbers, surgeons, apothecaries. Any who wished to practice these crafts had to submit to an examination before the College, and had also to show that they were not afflicted by any infirmity of a nature to render them ridiculous or objectionable and that they had never committed a voluntary homicide. Vacancies among the members were filled by co-optation among the other Roman physicians.

In place of the Roman colleges the Germanic peoples had guilds. There was a powerful guild in the 13th century of all Florentine physicians and apothecaries which had a monopoly of healing practice. The powers of the guild were vested in four consuls who constituted the examining as well

as the general governing and organizing body of medical practice. It is believed that the consuls were elected by the vote of all the guild members.

The example of Italy was followed by other nations, a college of physicians arose in every leading town.

Other corporations of teacher physicians and students, the Faculties, were founded with the object of teaching and conferring academic degrees. Clashes between Colleges of Physicians and Faculties resulted in the suppression of colleges on the Continent towards the end of the 18th century. In Paris there has never been a college of physicians, because the Faculty of Medicine developed from early times as a very powerful body. A college of surgeons developed later and had violent struggles with the Faculty until at last it was suppressed and absorbed by its opponent.

The College of Physicians of London (the "Royal" was affixed later) was founded in 1518 by Henry VIII at the plea of his physician, Thomas Linacre. The Fellows of the College filled vacancies in their ranks by selecting from other members of the corporation, later called licentiates. In 1555, the College of London refused to license for practice two Oxford graduates, Simon Ludford and David Laughton, on the grounds of inadequate knowledge and advised the University of Oxford to be more careful in the instruction of future physicians. After discussion with the College that University adopted a more complete course of medical studies, and one of the refused candidates, the ex-Franciscan friar, Simon Ludford, underwent the better instruction, obtained his license and was even admitted to the Fellowship.

These first organizers of British medicine understood that medicine is not only a natural but also a cultural science. In 1559 John Geynes, M.D., of Oxford, had to retract his expressed opinion against the infallibility of Galen before being admitted to the Fellowship.

Anatomy lectures started in the College about 1565; the Lumleian lecture was founded in 1581. Examinations for diplomas to practice, obligatory even for university graduates, were more severe than were those of the universities. Restricted licences were granted in certain cases, as for instance to John Banister, a physician of great repute in Nottingham, who gave only incomplete satisfaction and, notwithstanding the warm recommendation of Queen Elizabeth, was allowed to practice in London only on condition that he call in consultation for difficult cases a Fellow of the College. To Thomas Fludd, a Cambridge M.D. who also failed to satisfy the examiners as to his knowledge but impressed them by his moral qualities, license to practice was given but on condition

that he should improve his knowledge by certain specified readings from Galen.

The medico-political functions of the College consisted in advising the government, the universities, various corporations and the general public on the medical aspects of education, medical organization and public health. Queen Elizabeth commanded the Fellows to select a member of their society to replace Dr. Henry Atkins, who after being appointed physician to the naval expedition to Spain had to be put ashore because of seasickness.

In 1614 the Fellows moved their seat to the more spacious Amen Corner premises (at the end of Paternoster Row), which they leased from the Dean and Chapter of St. Paul's. A botanical garden was added, an anatomical theatre was built where Harvey taught, and the museum for housing the library was erected at the expense of Harvey.

The great name of Sydenham is missing from the roll because the minor academic degree which was all that he had for a long time, entitled Sydenham to acceptance only as a Licentiate. Later the creation of honorary Fellows (1664) enabled the College to include in its Fellowship many physicians of good standing who possessed the requisite University degree, but because of their age or position were unwilling to undergo the regular examinations imposed by the College. On the basis of this by-law Sir Thomas Browne, the author of *Religio Medici*, was made a Fellow. The only pressure exerted by governmental powers was the exclusion from the College of Roman Catholics, Presbyterians and Nonconformists, and to this effect the by-law allowing Fellowship exclusively to graduates of Oxford and Cambridge was enacted. The Goulstonian lecture was founded in 1639.

During the Civil War even the building of the College was condemned by Parliament as Church property to be sold by public auction. Dr. Baldwin Hamer, a Fellow, bought and returned it to the College. The Great Fire of 1666 began on a Saturday, September 1st, but involved the College only on the following Wednesday. In that interval Dr. Merrett, the Harveian librarian, succeeded in removing to a place of safety many College valuables, including some 140 important books, sole remnants of the Linacre, Gilbert, Harvey and Holbosh collections. After the Fire until new premises in Warwick Lane were built, the College met mostly at the house of Sir John Langham.

The Warwick Lane period of the College history corresponds roughly to the 18th century. The premises were constructed especially for that purpose under the supervision of Sir Christopher Wren. It was a magnificent building worthy of the century and of the elegant "gold-headed cane"

Fellows it housed. It occupied the four sides of a quadrangle enclosing a spacious paved court. Its entrance was through a wide gateway closed with massive iron gates under a semicircular arch over which was a lecture theater and a dome which Garth compared to a golden pill. The theater, erected at the expense of Sir John Cutler, was "a model of acoustical and optical architecture." The public rooms were spacious and handsome. The library consisted of two communicating rooms with galleries running around them. It was rapidly enriched by gifts. The greatest of these was the magnificent collection given by the Marquess of Dorchester, more than 3,200 volumes of physics, mathematics, civil law and philology. Next came books bought with money left for that purpose by Dr. Richard Hale and other gifts of Fellows, including those of Dr. Crow (Greek and Latin books), Dr. Thomas Gisborne and Dr. Baillie.

As the religious ban had been lifted the College justified its exclusion of all who were not graduates of the old universities by the laxity found in various foreign and even Scottish universities in the giving of degrees. The M.D. of Rheims, for example, could be obtained without residence on the basis of a thesis whose authority was not always scrupulously investigated, and for the modest fee of four guineas. However, Scottish and foreign graduates could be incorporated into the College of London only after a very severe examination, which put them on the same intellectual level as their Oxford and Cambridge colleagues.

Although the College was dwindling as central organizer and administrative body in medical matters, redeeming features were the courtesy and urbanity of its Fellows, the gentlemen of the gold-headed cane. Sir William Browne, President of the College, when the Licentiates, encouraged by John Fothergill among others, forced entry to the comitia, was the first to propose, although unsuccessfully, that Fothergill should be admitted to the Fellowship. The futile and petty obstruction against the Society of Apothecaries was ridiculed by a distinguished Fellow, Samuel Garth, who characterized the College of this period in this couplet:

"Mean faction reigns where knowledge should preside
Feuds are increased and learning laid aside."

Lettsom,¹ an opponent of the College, was often invited to its dinners.

The parting of the ways was at hand. The College had either to disappear, abandoning its functions to other institutions, or it could maintain its

leadership by adapting itself to new conditions. For a new lease of physical and spiritual life the College decided to move west, and after many efforts a site in Pall Mall East was chosen and a new house was built. The new College was opened on June 25th, 1825, under the presidency of Sir Henry Hallford. The magnificent ceremony, at which were present five Royal princes, most members of the government and many leading figures in national and intellectual life, symbolized the decision of the College to reaffirm its leadership. Fellows ceased to be recruited exclusively from the ranks of Oxford and Cambridge graduates. They were no longer limited to London practitioners, but were chosen from all parts of Britain and the Empire. Lectures, more extensively read than attended, often gave the last word in medical problems. The examinations maintained their high quality. Hospitals required College diplomas for staff appointments.

In all its activities the College maintained the triple standard laid down by the 16th century Fellows, and particularly the cultural humanistic background for physicians which was endangered during the mechanistic 19th century.

Associations, such as the British Medical Association, have undoubtedly rendered and are rendering great services to medicine, but history teaches that science and art can not be organized on a majority principle. The College which, endowed with such great will to power, has guided British medicine to the heights can not fade away. Historical thinking, the only mode of thinking that directs action, indicates that the College will maintain its centralizing and integrating functions, the Associations of today like the Faculties of old keeping for themselves certain branches of medical organization. The solution will be collaboration, not opposition.

The finding of this *modus vivendi*, the solution of this new crisis, dominates the activities of the College today. As in the entire course of its history, spiritual fermentation in the College is bound up with the physical need for change, for moving the seat of the institution. It is at this turning-point that the bombs of the Huns attempted the destruction of the College. The building has been damaged, but the spirit, far from being subdued by the barbaric insult, has acquired an added stimulus to its work in the organization of that most civilizing of human activities, the art of Medicine.

NUTRITION AND LONGEVITY

(J. B. Fitts, Atlanta, in *Med. Times*, Nov.)

Two years ago it occurred to me that perhaps something could be learned from the study of the food habits of aged people. I have studied the dietaries of 100 individuals in the age group 80 to 100 years.

¹ A physician who made reputation and fortune in the West Indies, removed to London, and of whom this was written:

"I, John Lettsom, purges, bleeds and sweats 'em;
Then if they still will die, I, John, let 's 'em."

J. M. N.

What are the conclusions that can be drawn from the dietaries of these old folks? They are free from food fads. Their diet is representative of the modern-day diet. It contains adequate protein, carbohydrate and fats. Their diets are, in calcium and phosphorus, far better than of a middle-aged group, because of the amount of milk used. The group is light in weight, averaging 135 pounds. They retained as many or more teeth than a similar number of the middle-aged group.

In my opinion the real secret of the old age of this group lies in the quality of their foods in the first five decades of their lives. From 1750 to 1850 there was a good supply of home-grown food pleasantly varied. Machine milling was not introduced into this country until 1870.

The individuals in the group study were born between 1835 and 1860. In those days there was no white flour, no white sugar, no white rice, no canned goods. They ate the coarsely-ground whole grains and lean meats.

The oldest group needs minerals and vitamins as vitally as a growing child. We can encourage the use of whole grain in bread and cereal, the wider use of fresh vegetables and fruits, the greater use of dairy products and lean meat; and we can restrict the excessive intake of energy-producing foods.

PUBLIC HEALTH

N. THOMAS ENNETT, M.D., *Editor, Greenville, N. C.*

PUBLIC HEALTH MILESTONES

(Continued from last month)

- 1896—Board passed a resolution requiring chemical and bacteriological examinations of municipal water supplies. Dr. Venable, of Chapel Hill, undertook the chemical, Drs. Anderson and Pate the bacteriological, examination. Board also directed Mr. John C. Chase, the engineer member, to inspect all municipal water plants in the state. Annual appropriation, \$2,000.
- 1897—General Assembly enacted law requiring county superintendents of health to be elected by county commissioners and reduced term of office to one year. Annual appropriation, \$2,000.
- 1898—The address of the President of the N. C. Medical Society this year by Dr. Francis Duffy of New Bern was devoted almost exclusively to the promotion of public health. It marked an epoch as sounding an advanced note in the advancement of human progress. The State Health Officer, Dr. R. H. Lewis, devoted a great deal of time and energy to trying to arouse the people of the state to the necessity for vaccination against smallpox.
- 1899—General Assembly improved the laws protecting public water supplies. Smallpox prevailed extensively in the state. Dr. Henry F. Long, and later, on Dr. Long's resignation, Dr. Joshua Tayloe, was employed to travel over the state, consulting with and advising the local sanitary authorities as to proper means for protecting the public. Annual appropriation, \$2,000.
- 1900—State Board of Agriculture, on request of State Board of Health, agreed to examine samples of water from public water supplies until Board of Health could provide its own examiner. Annual appropriation, \$2,000.
- 1901—State Board of Embalmers, with representatives of State Board of Health, established. County health work placed in the hands of county sanitary committees composed of county commissioners elected to serve with them. Term of office of county superintendent of health made two years. Annual appropriation, \$2,000.
- 1902—This year will be long remembered for the widespread prevalence of smallpox in virulent form. It caused many deaths in different sections in the early months of the year. In one county at least 50 persons died, including many of the well-to-do. Not having any system of vital statistics reports, it is impossible to even estimate the number of cases, except from physicians' voluntary reports and death notices in the newspapers.
- 1903—General Assembly enacted law permitting Board of Health to charge \$5.00 for each analysis of a public water supply, this fee to be used in paying Dept of Agriculture for services of examiner. Dr. Charles Wardell Stiles, U.S.P.H.S, before the State Medical Society at Hot Springs, called attention to prevalence of hookworm disease in the South. Dr. J. H. Nicholson and Dr. W. S. Rankin, working under State Board of Health during fall of 1903 and spring of 1904, showed great prevalence of this disease in North Carolina. Annual appropriation, \$2,000.
- 1904—A stenographer was employed. One hundred and twenty thousand pamphlets on tuberculosis were printed and distributed. There was a renewal and an extension of cooperative work between the Board of Health and the State press, a number of articles dealing with the hygienic and sanitary subjects being furnished the papers and published in them. Annual appropriation, \$2,000.
- 1905—General Assembly established State Laboratory of Hygiene; imposed water tax of \$64 on all public water companies; voted \$600 annually for the support of laboratory. Small appropriation made it necessary for the Department of Agriculture to continue

to assist State Board of Health. Annual appropriation, \$2,000.

1906—The North Carolina Association for the Study and Prevention of Tuberculosis was organized. Annual appropriation, \$2,000.

(To be continued)

A BULLET IN THE BRAIN $3\frac{1}{2}$ YEARS

(O. L. Veach, Sheridan, Wyoming, in *Rocky Mountain Med. J.*, Oct.)

Housewife, 31, on Jan. 10th, 1938; while riding in a car, pulled a .22 calibre pistol from under the seat, grasping it by the barrel. The gun was discharged, the bullet striking her under the right eye. She was brought to the hospital an hour afterwards, partly conscious and could be aroused to answer questions.

Seen two hours after the injury she remembered reaching for the gun. She complained of headaches right frontal and occipital. There was a bleeding point one inch below the orbital margin on the right. The right eye was proptosed; upper and lower lids were swollen, tense and ecchymotic. The lids could not be opened sufficiently to see the eyeball. The left eye was clear and showed no change when viewed with the ophthalmoscope. There was no bleeding from either ear or from the nose. A left hemiplegia and right facial paralysis were present; the patellar reflex on the left side was exaggerated, but normal on the right.

Röntgenogram of the head showed a foreign body resembling a bullet in the upper posterior part of the cranial cavity, slightly to the right side and very close to the inner table of the skull.

Two days later she was less stuporous. After 28 days, right eye was shrunken and sightless, some injection present and tender to palpation. No signs of sympathetic irritation in the opposite eye, but removal of the right eye was advised because of the possibility of sympathetic ophthalmia.

Mentality remained normal throughout convalescence. The bullet passed through the entire length of the brain without producing complete loss of consciousness. The only severe damage consisted of the loss of an eye and hemiplegia on the opposite side, from which she has almost completely recovered. The bullet remains in the cranial cavity without producing symptoms, and the patient is alive and well $3\frac{1}{2}$ years after the injury.

KELOIDS AND THEIR TREATMENT

(M. J. Costello, New York, in *Med. Rec.*, Sept. 17th)

IN AFRICA AND AUSTRALIA, certain dark-skinned tribes use this cicatrization as a means of ornamentation which gives those so endowed an advantage over their rivals. Keloids stand out best on the dark skin. The pale-skinned races have sought an outlet for this desire of ornamentation by tattooing the body.

Histologically a keloid is a hard fibroma. Keloids are notorious for their tendency to recur after surgical excision. At times, especially in the beginning, they are painful and tender.

The electric cautery is less likely to cause keloid than is the electrodeiccation needle, nitric acid or acid nitrate of mercury. Subjecting an operative wound to too great tension in approximating its edges is likely to lead to keloid formation. Cases of overgrowth of pyloric scars have been recorded in Negroes, and of the tongue and lips in both races.

If an incision is to become keloidal or if a keloid is going to recur, it will usually do so within three months after the operation or injury. At the first suggestion of keloid formation x-rays or radium are imperative; the se-

lective action of these rays is on the young connective tissue cells.

The superiority of x-rays over any other treatment for keloid is conceded.

The most satisfactory results are obtained in beginning and in young keloids (less than six months old) and in the flat superficial keloids following burns which often lead to painful and disabling contractures. When a keloid is of slow evolution, old, hard and stationary, it is radioresistant.

The small, young, soft, pea- to cherry-size, flattened, superficial lesions respond well to subintensive doses of unfiltered x-rays given at six weeks to two-month intervals, and cosmetic deformity is negligible. Unfiltered x-rays also are beneficial in the treatment of extensive, superficial, soft keloids spread out diffusely and following extensive burns. The bands causing contractures, ectropion and distortions of the face are loosened by this type of x-rays. When a keloid disappears there is usually a broadening of the scar which is quite soft allowing relaxation of the parts. A broad, white line of dense fibrous tissue should be removed surgically since it is recalcitrant to any form of x-rays or radium. Thick, hard old keloids covering a large area should not be treated by irradiation.

OUTLOOK FOR CORONARY THROMBOSIS IS GENERALLY QUITE FAVORABLE

(E. F. Bland and P. D. White, Boston, in *Jour. A. M. A.*, Oct. 4th)

A ten-year analysis of the after-history of 200 patients with coronary thrombosis indicates a favorable outcome in a large percentage of cases.

Of the entire series, one-fifth died during the four weeks after their initial attack and one-third of the 162 who survived the acute attack recovered completely without cardiac symptoms. Of this group more than half survived the first decade. Of those who died after temporary "complete" recovery, coronary insufficiency accounted for most of the deaths. Of the 188 patients who succumbed to failure of the coronary circulation, 11 had another and fatal occlusion; 6 died suddenly, presumably of acute coronary insufficiency and 1 died during severe angina pectoris. Only 1 in the group who completely recovered, later had congestive failure.

A second group of 63 were limited thereafter by angina pectoris on effort. Nevertheless, 19 survived the ten-year period. A slightly higher proportion (34 of 44 patients, or 77 per cent) died later of coronary insufficiency. Of these 34, 11 had a subsequent fatal occlusion, 14 died of increasingly severe angina pectoris and 9 died suddenly. Again it is of interest that only 2 later had progressive congestive failure.

Finally, among the remaining 44 patients, dyspnea on exertion was chiefly responsible for limitation of activity, although some had both angina pectoris and dyspnea. None with dyspnea survived the ten-year period.

Thirty-three of the 50 patients who survived the first decade were limited by angina pectoris as they entered the second decade, and 9 of these had one or more later attacks of coronary thrombosis; the remaining 17 were without cardiac symptoms, although 6 had further attacks of coronary thrombosis, from which they completely recovered.

TUBERCULOSIS AND INSANITY.—In every mental institution tuberculosis is a problem of first order. Of the deaths from tuberculosis in the United States, 5.2 per cent occur in mental hospitals while only 15.9 per cent are in tuberculosis hospitals.—M. Pollak, M.D., et al., *Amer. Rev. of Tuber.*, March, 1941.

SOUTHERN MEDICINE & SURGERY

Official Organ

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CAROLINAS AND VIRGINIAJAMES M. NORTINGTON, M.D., *Editor*

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THE COMING TRI-STATE MEETING

FEBRUARY 16th-17th

IT WILL BE remembered that the membership of the Tri-State Medical Association of the Carolinas and Virginia have, within the past year, been canvassed as to their opinion on the desirability of holding the annual meetings at a time of year promising better weather. Replies from the members express a preference for holding the meeting at the time-honored dates in February.

So you members are being reminded that the place of meeting for 1942 is the good city of Greenville, S. C., the days the sixteenth and seventeenth of February.

President Brenizer has spent a good part of 1941 in Boston and New York and has availed himself of opportunities thus afforded for obtaining for the meeting just the kind of speakers from afar that you would wish to hear, on just the subjects which merit most attention right now.

These guests will bring us the best of medicine and surgery of the day—all of it solid, some of it sensational.

The members are reminded that there are some vacancies on the program, and urged to write the secretary promptly for place.

However many medical meetings you attend, the Tri-State's unique attractiveness and usefulness bring together the faithful year after year, always with an eager group of new members, themselves soon to become Tri-State addicts.

Be planning to make your attendance certain. Write for place on the program. Have your doctor friends old and new send in applications, and bring them with you.

CASES IN WHICH BILLS IN INDUSTRIAL
CASES ARE REDUCED

NORTH CAROLINA doctors who have the care of industrial cases are requested to keep accurate records of all such cases in which their bills are not paid in full. This request is made by the Chairman of the Committee appointed by the State Medical Society to deal with these matters.

The records show that fees allowed for this class of work are 30 per cent higher in South Carolina and 23 per cent higher in Virginia, than in North Carolina. Also our information is that the companies selling this class of insurance are paying out less than half the amount of the premiums paid in. Clearly, premiums should be reduced or more should be paid for medical and surgical care of the insured.

There appears no good reason why North Carolina doctors should be paid less for the same kind of work than are doctors of neighboring states.

This Committee of The State Medical Society is taking its duties seriously. With the proper co-operation of the doctors over the State who do this work this wrong will be righted.

THE PRESENT STATUS OF SULFONAMIDE THERAPY

THOSE marvelous sulfonamides! What will they not do? That they mark an advance in therapy which will hold high place among the achievements of Medicine for all time, there can be no doubt. But so much is written about them as to confuse the doctor who seeks to know what they will and what they will not do; which of them is best in certain cases; how much to give and how often.

Here¹ is just that information.

Sulfanilamide—The highest blood levels are found at the end of 4 hours, all the drug is excreted at the end of 24 hours; it should be given q. 4 h. Effective blood concentration for severe infections are 10-15 mgms. %, less severe, 5-10 mgms. %. It saturates the tissues in same concentration as the blood and readily passes into the spinal fluid in three-fourths of the blood concentration. An excellent drug to treat certain types of meningitis.

Sulfapyridine is irregularly absorbed both in the same patient, and in different patients. This sometimes makes it necessary to give the drug intravenously as the sodium salt. Blood levels of from 4 to 6 mgms. % are effective. The drug is hard to excrete by the kidneys, may block the kidneys by crystal formation.

Sulfathiazole is more rapidly absorbed and excreted by the kidneys than is sulfanilamide. Effective levels lie between 2 and 6 mgms. %.

Sulfaguanidine is very soluble in the gastrointestinal tract but is poorly absorbed. Only low blood levels of from 2 to 5 mgms. % are reached. The small amounts absorbed are excreted by the kidneys.

Sulfadiazine, only recently released for general use, is less rapidly absorbed than either of the other three; its acetyl salt is more easily excreted, even in the presence of kidney damage. This may mean that it will be the best drug to use where kidney damage is present. Blood levels of from 6 to 9 mgms. % are effective. Every 4 h. during the first 24 hours, q. 6 h. thereafter; very effective in meningitis.

Suggested initial dose for an adult weighing 150 pounds with a moderately severe infection: *sulfanilamide* 60 to 90 grains; *sulfathiazole* 45 to 60; *sulfapyridine* 45 to 60; *sulfadiazine* 60 to 75; *sulfaguanidine* 60 to 90.

The maintenance dose is 15 to 20 grains q. 4 h., day and night, with the exception of sulfadiazine where, after 24 hours, the dose should be given q. 6 h. In most cases, it is recommended that large amounts of water, and sodium bicarbonate two to three drams, be given in 24 hours.

Sulfanilamide can not be given intravenously but can be given subcutaneously in an .8% solution of normal saline, or may be given by rectum in about a 1% solution of saline. Sulfapyridine, sulfathiazole and sulfadiazine may be given intravenously as the sodium salt in a 5% solution in distilled water.

Sulfonamides stop the growth of susceptible bacteria but do not kill those already present.

Sulfanilamide is the drug of choice in all hemolytic streptococcal infections. Sulfadiazine may prove even more effective.

In urinary-tract infections due to Group B hemolytic streptococci and bacillus proteus, sulfanilamide seems to be more effective than other derivatives. It is the best derivative in the treatment of chancroids, lymphogranuloma venereum, and trachoma. Favorable reports in the treatment of actinomycoses, undulant fever, ulcerative colitis.

Sulfapyridine cure of the pneumococcal pneumonias is dramatic, the mortality rate is reduced from 25 to 50% to less than 10%. Because it is much less toxic, however, sulfathiazole has replaced sulfapyridine in the treatment of the pneumococcal pneumonias. In some cases it is necessary to supplement chemotherapy with type-specific antipneumococcal serum. A specimen of sputum should be collected *before therapy is started*, and if typing is not practicable at once, the specimen should be refrigerated for future possible typing in case there is no response to drug therapy in 36 to 48 hours. A blood culture should be taken before therapy is started, if possible, since more intensive treatment is generally necessary if the culture is positive.

While sulfathiazole is the drug of choice in the pneumococcal pneumonias, sulfapyridine is the best drug in all other pneumococcal infections.

In the treatment of staphylococcal or pneumococcal meningitis, sulfapyridine is the drug of choice.

Sulfathiazole is best in all staphylococcal infections, such as carbuncles, cellulitis, osteomyelitis, and staph. pneumonia; it has cut the mortality rate in half. Any focus of infection feeding the blood stream should be drained as early as possible.

In the treatment of male gonorrhea, sulfathiazole is perhaps the drug of choice. In female gonorrhea, sulfapyridine still seems to be the favorite.

In the prevention and treatment of wound infections by local application a combination of sul-

1. J. N. Compton, Little Rock, in *Jl. Ark. Med. Soc.*, Nov.

fathiazole and sulfanilamide is highly effective.

In experimental gas gangrene, sulfathiazole locally, or a mixture of sulfathiazole and sulfanilamide, are most effective in prevention, and antiserum is most effective in treatment. Local sulfonamide application seems more effective than oral medication. These drugs may be used locally in a saturated solution, or in powder form.

Sulfadiazine seems just as effective as other sulfonamides in the treatment of pneumococcal, staphylococcal and streptococcal pneumonias, meningococcal meningitis, acute infections of the upper respiratory tract, including sinusitis and erysipelas; very effective against B-coli infections of the urinary tract, and in acute gonococcal arthritis. It is a much less toxic drug. There is less nausea, vomiting, drug fever and rash. The levels of the drug in the blood are higher. It is excreted with less damage to the kidneys, and its insoluble acetyl salt more easily excreted.

Sulfaguanidine has proved effective in acute bacillary dysentery. In surgery of the large bowel, pre- and post-operative use of sulfaguanidine is thought to prevent complications of peritonitis, and to permit rapid healing of the sectioned bowel.

The following diseases are not favorably influenced by the sulfonamides: Influenza, common colds, rheumatic fever, typhoid fever, malaria, tuberculosis, non-hemolytic streptococcal infections, anerobic streptococcal infections, tularemia and chronic sinusitis.

There is no contraindication except a history of sensitivity to one of these drugs. Sensitive to one, likely sensitive to another. Cautious use of small doses at first.

Mild toxic symptoms are nausea, vomiting, cyanoses, mild psychoses, and acidosis.

Moderately severe fever and rash, the most frequent. Usually on 5th to 9th day. Hematuria occurs 3 times as often from sulfapyridine as from sulfathiazole. Very severe toxic symptoms require stopping the drug at once, forcing fluids and alkalies. Slow hemolytic anemia may not require stopping. Transfusions may be necessary, however, if severe infection is present and drug therapy needed badly.

Severe toxic symptoms—2% of cases—acute hemolytic anemia in 24 to 72 hours, fever and pulse rise rapidly, pallor followed by jaundice; urine and feces dark with urobilin, marked increase in the white count with a marked decrease in the red count and hemoglobin. Drug must be stopped immediately and a transfusion given, to be repeated p. r. n.

Acute granulocytosis, usually 12th or 14th day—less than 1/2% of cases. Moderately decreased

white count with some granulocyte reduction, not infrequent at the onset of sulfonamide therapy, is no contraindication to continuance of therapy. No deaths reported from disturbances of the white cells within the first 12 days of sulfonamide therapy. Acute agranulocytoses comes at the end of the second week, with return of fever, increasing prostration, sore throat or gums, followed by ulceration, and should alarm the physician. If blood counts are not done routinely during sulfonamide therapy, they should be done at least after the 10th day.

Acute toxic hepatitis occurs usually in the second week. Jaundice develops without pallor. The feces are light instead of dark as in acute hemolytic anemia. The drug must be stopped at once.

DOCTOR COOPER LAYS ASIDE THE PEN

NIGH to twenty years ago it was that to Dr. George M. Cooper's responsibilities as a member of the staff of the State Health Officer was added the editorship of the North Carolina Health Bulletin; and well has he discharged all these responsibilities. The increase in the demands on his time and strength in the discharge of his other State Health duties now necessitates his relinquishing the editorial goose-quill.

Many public officers, probably most, fulsome oratory proclaims as having unselfishly devoted their best to the public good. With truth these words may be spoken, and will be spoken all over the State, of Dr. Cooper. A deep satisfaction must be his to realize that his labor has not only been wise and devoted, but that it has been of tremendous accomplishment. And it must be satisfying to him to know that the mantle of his editorship falls on the shoulders of one who will continue the good work in a highly competent manner without change of plan.

Dr. John H. Hamilton, for years Director of Laboratories of the State Board of Health, will take over the duties of editor of The Health Bulletin. A happy consummation it is.

All praise to Dr. Cooper for his score of years of fruitful labor in spreading the Gospel of Health in North Carolina. Congratulations to Dr. Hamilton on his opportunity to take over this work as a going concern and carry it forward in his own competency.

DOCTOR REYNOLDS APPOINTED TO HIGH OFFICE

FROM its inception to the present time the office of Health Officer of North Carolina has been filled by men of unusual ability and distinction. The present occupant of that office, Dr. C. V. Reynolds, already Vice President of the State and Provincial

Health Authorities of North America, has been appointed Chairman of the Subcommittee on Health under the Procurement and Assignment Agency recently established by the President. Thus the fine tradition is carried on.

DOCTOR GREER BAUGHMAN

THE sad news has just come of the death of this lovable and much loved doctor. No one could be in intimate association with Dr. Baughman and not come under the spell of his charm.

An incident of many years ago will give to those who were not so fortunate as to know him a true picture of this warm-hearted man. A group of Medical College of Virginia students were standing before a board on which the names of those who had been given pass marks on a recent examination had just been posted. Dr. Baughman came up with his bright smile and said, "I want to rejoice with them that d orejoice"; whereupon some student added "and weep with them that weep?" All the happiness went out of Dr. Baughman's face; tears came to his eyes as he answered, "I do indeed, I do indeed," and walked slowly away with his hands behind his back.

Dr. Baughman taught many subjects at "the old school," and he taught them all well.

His practice early in general medicine, and later for many years in obstetrics, was one in which were blended the best of the Science and the best of the Art of Medicine. In his joyous presence was healing.

His service in the uniform of a soldier of his country was arduous and devoted.

It is hard to think of one of his buoyancy, his enthusiasm, his love of life and of his fellows, as being dead.

AS A CHRISTMAS PRESENT—A year's subscription to this journal will remind your doctor friends each month, will keep them reminded of your friendship and of your thought to supply them with the most useful of journals of General Medicine and Surgery. In groups of 10, \$2.00 per year.

THE ESTROGENS

WHAT may the estrogens be counted on to do for our patients? Claims of many are extravagant. There is much disagreement and confusion about the merits of estrogenic substance. This was inevitable, for their usefulness of whatever degree nearly always concerns the reproductive organs.

At a big New York hospital these agents have been tried out sufficiently to enable the investigator¹ to arrived at some conclusions. These conclusions are here printed for the benefit of those of our readers—and they must be many—who are in a fog about the usefulness of estrogens.

The estrogens have been widely used in almost every ailment that woman is heir to.

In my opinion, the applicability of estrogens is limited to the following uses—

Gonorrhea of infants and prepuberal adolescents, as an aid to chemotherapy. They effect keratinization of the vulva and vagina. The gonococcus can not exist upon such epithelium.

Menopause—relief of the neurovascular, digestive, arthritic and local atrophic symptoms.

The estrogens available for therapeutic use are Estrone, Estradiol, and Estriol. These are absorbable by mouth (larger doses required); by subcutaneous injection; by inunction; by implantation; and vaginally, in the form of suppositories. With due allowance for the portal of entry, for the chemical nature of the estrogen, and for variation in dosage, the effect is the same whatever the mode of administration. Therefore, except when local effects for gonorrhea of children or for senile vaginitis are desired, for both of which I employ vaginal suppositories of estrone, I use and recommend the oral exhibition of alpha estradiol, in tablet form. In the menopause, 30 tablets, each containing ½ mg. of alpha estradiol, are prescribed in the following way: 1 tablet, 3 times a day for 4 days; 1 tablet, twice a day for 5 days; 1 tablet once a day for 5 days; and 1 tablet every other day for 3 doses. The therapy is then intermitted until the flushes reappear. During this interval, it is advantageous to give phenobarbital, ¼ of a grain, one to 3 times a day. As soon as the flushes reappear, another course is given. Every effort should be made to increase the time intervening between courses until therapy may be discontinued.

"To some of you," the writer goes on to say, "the limits of estrogenic therapy which I have set may appear absurdly rigid. Nevertheless they are based upon trial, experience and reflection, and in my opinion, are fully valid. To me the present excesses appear as unwarranted, as if you attempted to treat these same diseases with insulin or parathormone."

NEWS

SEABOARD MEDICAL ASSOCIATION

At its annual meeting this month at Virginia Beach, this Association elected Dr. George Erick Bell, of Wilson, N. C., President, succeeding Dr. Waverly R. Payne, of Newport News, Va. Others officers elected were Dr. A. A. Burke, of Norfolk, First Vice-President; Dr. Joshua Tayloe, of Washington, N. C., Second Vice-President; Dr. John R. Hamilton, of Nassawadox, Va., Third Vice-President; Dr. Joseph Smith, of Greenville, N. C., Fourth Vice-President, and Dr. Clarence Porter Jones, of Newport News, re-elected Secretary-Treasurer.

The meeting next year will be held at Wilson, N. C.

Papers were presented as follows:

Dr. C. F. Strosnider, of Goldsboro, N. C., The Hookworm as a Cause of Inflammation of the Duodenum; Dr. Frank Newby Mullen, Jr., of Norfolk, Congenital Obliteration of Biliary Tract; Dr. Oscar Cranz, of Kinston, N. C., Accessory Abdominal Testicle; Dr. J. Warren Sayre, of Newport News, Congenital Hypertrophic Pyloric Stenosis; Dr. R. S. Anderson, of Rocky Mount, N. C., Exophthalmic Goiter; Dr. John L. Rawles, of Norfolk, Extramammary Breast Carcinoma; Dr. R. Henry Temple, of Kinston, N. C., Gastric Hypoacidity, and Dr. H. Hudnall Ware, Jr., of Richmond, Management of the Toxemias of Pregnancy.

THIRD (S. C.) DISTRICT MEDICAL SOCIETY

Clinton, S. C., November 18th

Program:

1. Victory (Chorus and Boy Scouts—State Training School).
 2. Invocation.
 3. Dinner (Divertissements¹).
 4. Remarks (B. O. Whitten, M.D., Superintendent State Training School).
 5. Papers—F. K. Shealy, M.D., presiding.
 - (a) Surgical Treatment of Varicose Veins—C. J. Scurry, M.D., Greenwood.
 - (b) Acute Interstitial Pneumonitis—Hugh Smith, M.D., Greenville.
 - (c) Minor Disorders of Pregnancy—Oren Moore, M.D., Charlotte.
1. Divertissements
- (a) "Scare Crow Song" from "Wizard of Oz."
 - (b) "It's Foolish But It's Fun" from "Spring Parade."
 - (c) "Gypsy Life" from "The Bohemian Girl."
 - (d) "The Hopak" (Russian) Chorus and Dance.

THIRD DISTRICT (N. C.) MEDICAL SOCIETY SAMPSON COUNTY MEDICAL SOCIETY

The Sampson County Medical Society and the Third District Medical Society held a joint banquet meeting at the Rufus King Hotel, Clinton, the evening of December 2nd. The scientific program was given by Dr. Tinsley Harrison, Dr. H. H. Bradshaw and Dr. Leroy J. Butler, of the Bowman Gray Medical School of Wake Forest College. Dr. Harrison talked on Cardiovascular Emergencies. Dr. Bradshaw on Cancer of the Lung, and Dr. Butler on The Care of Premature Infant. Short talks were made by Dr. F. Webb Griffith, President of the State Medical Society; Dr. Roscoe McMillan, Secretary of the State Medical Society; Dr. John B. Wright, of Raleigh, and Dr. J. B. Sidbury, of Wilmington, past presidents of the State Medical Society; Dr. Wm. M. Copridge, President of the State Board of Medical Examiners; Dr. G. M. Cooper, Assistant State Health Officer; Brigadier General H. C. Coburn, Chief Medical Officer of Fort Bragg; Col. E. D. Quinnell, Chief Medical Officer of Camp Davis; and Dr.

B. A. Cockerell, Chief Medical Officer of Veterans' Hospital, Fayetteville.

In the business sessions Dr. W. P. Starling, of Roseboro, was elected President of the Sampson County Medical Society, Dr. J. M. Lee, Newton Grove, Vice-President, and Dr. G. E. Best, Clinton, Secretary-Treasurer; Dr. J. Street Brewer, Roseboro, was elected President of the Third District Medical Society, Dr. A. N. Johnson, Garland, Vice-President, and Dr. W. P. Starling, Roseboro, Secretary-Treasurer.

Officers of the County Society for 1941 were: Dr. J. H. Williams, Clinton, President; Dr. W. P. Starling, Roseboro, Secretary-Treasurer. Officers for the District Society for 1941 were: Dr. W. C. Mebane, Wilmington, and Dr. S. C. Cox, Harrell's Store, Secretary-Treasurer.

SEVENTH DISTRICT MEDICAL SOCIETY

Gastonia, N. C., November 5th.

OFFICERS

Dr. N. E. Lubchenko, Harrisburg, President; Dr. L. N. Glenn, Gastonia, Vice-President; Dr. H. C. Thompson, Shelby, Secretary; Dr. R. H. Crawford, Rutherfordton, Councilor.

Papers: The Management of Occiput-posterior Position, Dr. W. W. McChesney, Gastonia; Bleeding During Pregnancy, Dr. Oren Moore, Charlotte; Effective Therapy in Chronic Alcoholism, Dr. T. B. Mitchell, Shelby; Diagnosis and Treatment of Cardiac Arrhythmias, Dr. L. Emmett Madden, Columbia, S. C.; The Procurement of Doctors for the Reserve Corps of the Army, Maj. Roy C. Tatum, Knoxville, Tenn.; Suggestions for the Use of Chemotherapy in the Practice of Pediatrics, Dr. Jasper S. Hunt, Charlotte.

At the dinner at the Gaston Country Club: Address of Welcome, Dr. W. M. Roberts, Gastonia; Response, Dr. W. C. Bostic, Sr., Forest City.

Addresses: The Welfare of Our State Society, Dr. F. Webb Griffith, Asheville, President, Medical Society of the State of North Carolina; The Evolution of Tuberculosis, Dr. Paul H. Ringer, Asheville, President of the Southern Medical Association.

RICHMOND ACADEMY OF MEDICINE

New officers elected December 10th are: Dr. Arthur S. Brinkley, President-elect; Dr. Emmett Ferrell and Dr. A. E. Turman, First and Second Vice-Presidents, respectively, for 1942; and Dr. G. R. Maloney and Dr. William R. Jordan to the Board of Trustees, 1942.

President for 1942, elected last year, is Dr. Beverley R. Tucker, who will take office at the first stated meeting in January. Dr. William Branch Porter, 1941 president, presided over the meeting.

NORTHERN VIRGINIA MEDICAL SOCIETY

Modern methods of treating pneumonia were discussed on December 9th, by Dr. Dean B. Cole, of Richmond, at a meeting of the Society at Front Royal. Dr. John B. McKee, of Winchester, presided. Other speakers were Drs. O. W. Carper and L. K. Woodward, of Front Royal, and Leslie N. Bell and McKee, of Winchester.

SOUTHERN SURGICAL ASSOCIATION

Dr. Barney Brooks, of the Vanderbilt University Hospital, Nashville, Tenn., is president for 1941; Dr. Frank S. Johns, of Richmond, Va., and Dr. Foy Roberson, of Durham, N. C., vice presidents; Dr. Alton Ochsner, of Tulane University, secretary, and Dr. Charles A. Vance, of Lexington, Ky., treasurer.

Dr. Harry H. Kerr, of Washington, retiring president, is a member of the council to replace Dr. Harvey B. Stone, of Baltimore.

IREDELL-ALEXANDER COUNTIES MEDICAL SOCIETY

Iredell-Alexander Counties Medical Society, in a meeting Dec. 10th, elected officers and passed a resolution offering the services of the society to the government in the present national emergency.

Dr. J. S. Talley was elected president to succeed Dr. C. B. Herman. Dr. J. Y. Templeton was elected vice-president. Dr. J. S. Holbrook was re-elected secretary-treasurer. Dr. G. W. Taylor was named delegate to the state convention with Dr. R. S. McElwee, alternate.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES met at the Jefferson Hotel, Richmond, on October 27th-29th. The following officers were elected for the coming year: President, Dr. Loren R. Chandler, Dean and Professor of Surgery, Stanford University School of Medicine, San Francisco; President-elect, Dr. W. S. Leathers, Dean and Professor of Preventive Medicine and Public Health, Vanderbilt University School of Medicine, Nashville; Vice-President, Dr. E. M. MacEwen, Dean and Professor of Anatomy, State University of Iowa College of Medicine, Iowa City; Treasurer, Dr. Arthur C. Bachmeyer, Associate Dean, the School of Medicine, University of Chicago; Secretary, Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago.

The University of Louisville was designated as the place of meeting for next year.

The following officers of the MENTAL HYGIENE SOCIETY OF VIRGINIA were elected at the annual meeting of the Society held in Richmond, October 29th: President, Dr. Frank H. Redwood, Wainright Building, Norfolk; Vice-President, Mr. W. Daniel Ellis, 3400 Patterson Avenue, Richmond; Secretary, Dr. J. J. Scherer, Jr., 1603 Monument Avenue, Richmond; Treasurer, Mrs. Donna Banting Bemiss, 1001 East Clay Street, Richmond; Executive Secretary, Mr. F. W. Gwaltney, 309 North 12th Street, Richmond.

DR. ROYSTER GIVES DINNER

The evening of November 19th, the Raleigh Academy of Medicine was entertained by Dr. Hubert A. Royster, at a dinner commemorating his 70th birthday, at his home, "Woodland," on Beechridge Road, Raleigh.

Following an epicurean repast, a session was held with papers presented on medical topics. Dr. Chauncey L. Royster, of Raleigh, nephew of the host, discussed Early Diagnosis of Shock. The host's two sons, both of Philadelphia, also presented papers: Dr. Henry P. Royster on Nutrition in Surgical Patients, and Dr. Hubert A. Royster, Jr., on Resuscitation of the New-Born.

Out-of-town guests included Dr. W. deB. MacNider, of Chapel Hill; Dr. Foy Roberson, of Durham; Dr. B. C. Willis, of Rocky Mount, and Dr. Donnell B. Cobb, of Goldsboro. Nearly all the fifty members of the Academy were present, including three descendants of the founders. Dr. John S. McKee, Dr. Hubert B. Haywood and Dr. Royster.

The Academy presented Dr. Royster with a handsome chair and a neon-light desk lamp.

The Raleigh Academy of Medicine has the distinction of being the oldest local medical organization, which has preserved its continuous existence, in North Carolina. Its first stated meeting was held February 2nd, 1870.

Charter members were Drs. William G. Hill, Charles E. Johnson, Fabius J. Haywood, E. Burke Haywood, Richard B. Haywood, F. J. Haywood, Jr., W. H. McKee, William Little and W. I. Royster. Children and grandchildren of all these eminent physicians are now living in Raleigh.

The Academy meets quarterly and the anniversary of

Founders' Day in February always is celebrated. Officers for the current year are Dr. C. B. Wilkerson, President; Dr. J. J. Combs, Secretary, and Dr. A. S. Oliver, Treasurer.

POPULAR PHYSICIAN TO GO TO STATE SENATE

Dr. J. D. Hagood, of Clover, Va., chairman of the Halifax County Board of Supervisors, has been declared the nominee of the Democratic party for the State Senate to replace Lieutenant Governor-elect William M. Tuck, resigned. Nomination is equivalent to election.

Dr. Hagood has been practicing medicine and surgery in Halifax County for twenty-seven years, first at Scottsburg and at present at Clover. At the latter place he heads the Little Retreat Hospital, taking over after Dr. R. H. Fuller removed to South Boston to operate the South Boston Hospital.

Since removing to Halifax from his native Mecklenburg for practice, Dr. Hagood has served on the County School Board, then the Board of Supervisors. He has been active in the State's defense set-up, and is now serving as a member of the regional defense board by appointment from Governor Price. He was a member of the county examining board during the last World War.

DR. H. C. HENRY, Director of Virginia State Hospitals, has been appointed a member of a committee which will prepare a history of American Psychiatry for the American Psychiatric Association. Dr. Gregory Zilboorg, of New York, heads the committee.

DR. THOMAS H. BRANTLEY announces the opening of offices on December 1st—Cannon Building, Concord, N. C., and Professional Building, Kannapolis, N. C., for the practice of Urology and Urological Surgery.

DR. GLENN L. HOOPER, of Dunn, was elected president of the Harnett County Medical Society at its annual business meeting, held Dec. 1st, at Shug's Place, between Dunn and Erwin. Dr. PAUL G. PARKER, of Erwin, the retiring president, served as toastmaster at the banquet. Dr. W. W. STANFIELD, of Dunn, was elected vice president, and Dr. W. B. HUNTER, of Lillington, was named secretary.

DR. WM. DEB. MACNIDER, Kenan research professor of pharmacology in the University of North Carolina, is president for 1941-2 of the Society for Experimental Biology and Medicine.

DR. CHARLES M. CARAVATI, Richmond, announces the opening of his offices in the Professional Building; practice limited to Internal Medicine with emphasis on diseases of the gastrointestinal tract.

DR. W. R. BRACEY, of Richmond, is the new president of the Seaboard Air Line Railroad Surgeons.

DR. JOHN S. MCKEE, JR., for the past eight years a member of the medical staff of the State Hospital at Morganton, has resigned to engage in private practice in Morganton.

MARRIED

Dr. Robert Irving Mills and Miss Katherine Elizabeth Scherer, both of Richmond, were married November 29th.

Dr. Cleon Walton Goodwin and Miss Margaret Dixon Abbott, both of Wilson, were married on November 29th.

Dr. John Cochrane Reece, of Newton, formerly of Statesville, and Miss Adelaide Trotter, of Winston-Salem, were married on November 29th. Dr. Reece is stationed at Fort Bragg as a Lieutenant in the Medical Corps of the Army.

Dr. William Walton Kitchin and Miss Nancy Phillips Brewer, both of Wake Forest, were married on December 2nd. Dr. Kitchin, a son of Dr. Thurman D. Kitchin, President of Wake Forest College, is a Lieutenant in the Medical Corps of the United States Army and is stationed at Charleston, South Carolina.

Dr. Joseph Page Holland, United States Navy, and Miss Mary Ruth Walker, of Burlington, were married in Pensacola on November 28th.

DIED

Dr. Francis Wayles Shine, 67, one of the nation's distinguished eye, ear, nose and throat specialists, died September 24th at University of Virginia Hospital on the campus of the school founded by his great-great-grandfather, Thomas Jefferson.

Dr. Shine will be buried in the private grounds of the Jefferson family on the slope of Monticello Mountain.

Before his retirement from active medical practice in 1939, Dr. Shine was executive surgeon for eleven years of the New York Eye and Ear Infirmary.

He was born on June 25, 1874, in Orlando, Fla., a son of Thomas J. Shine, a captain in the Confederate Army, and Virginia Eppes Shine, a great-granddaughter of Jefferson. His great-grandmother was Maria, youngest daughter of the third President, and wife of John Wayles Eppes, who represented Virginia in both branches of the Congress. He entered the University of Virginia in 1892, and received his Doctor of Medicine degree in 1898. He took a leading part in student activities at the University of Virginia and played on the great football team of 1893, which within two weeks defeated Trinity, Georgetown, Navy, V. M. I. and North Carolina.

Dr. Shine made his home for many years in New York, and since his retirement had been living at his home at Farmington, near Charlottesville.

During the World War he served with the United States Army as captain with the New York Hospital Unit. He was promoted to the rank of major and became consultant for the American Hospital in Paris.

Dr. William Moore White died at his home at Lenoir, N. C., on October 31st, at the age of 81.

Dr. E. LeRoy Kellum, 42, chief of the medical staff of Grace Hospital, Richmond, was killed instantly in a two-car crash in North Carolina on Thanksgiving Day. Dr. Kellum's wife suffered a fractured pelvis and multiple cuts and bruises. Mrs. Fred D. Morris, a passenger in Dr. Kellum's automobile, died in a Durham hospital four hours after the accident. Fred D. Morris, fourth passenger in the Kellum car, and said to have been the driver at the time of the accident, sustained a fractured spine and a ruptured kidney in the crash.

Dr. Kellum, a native of New Bern, was graduated from the University of North Carolina and later in medicine from the University of Pennsylvania. He served seven years at the Mayo Clinic.

Dr. John P. Brown, 77, retired physician and more than any other man responsible for the town of Fairmont, N. C., was the son of a physician and his father, Dr. John Brown, C., died at his home there on December 8th. Dr. Brown

for years was the leading doctor of the Southern Robeson community that his son was to help build into the town of Fairmont.

OUR MEDICAL SCHOOLS

UNIVERSITY OF VIRGINIA

The newly-formed Virginia Branch of the Society of American Bacteriologists met in Charlottesville on Saturday, November 1st. Papers covering a wide range of subjects including milk, water, and shellfish bacteriology, medical bacteriology and mycology were presented at morning and afternoon sessions.

At the recent meeting of the American Public Health Association in Atlantic City, a report of the work of the Committee on Whooping Cough was presented by Dr. George McL. Lawson, Professor of Preventive Medicine and Bacteriology of the University of Virginia. This committee is designed to evaluate public health administrative practices in the control of whooping cough and to act as a correlating agency for research in this field in North America.

On October 20th Dr. Claude E. Forkner of the Cornell University Medical School delivered the second annual Phi Beta Pi Medical Fraternity lecture. He spoke on The Diagnosis and Treatment of the Leukemias.

Dr. Fletcher Woodward presented a paper before the American Academy of Ophthalmology and Otolaryngology in Chicago on October 23rd, on Complete Cicatricial Stenosis of the Esophagus: Permeation Made Possible by External Operation in Certain Cases. On November 11th he spoke before the Danville and Pittsylvania County Medical Society on Diseases of the Esophagus.

Dr. W. W. Waddell attended the meeting of the American Academy of Pediatrics in Boston, October 7th-11th, and took part in the Round Table discussion on the subject Hemorrhage in the Newborn.

Dr. Samuel Vest was guest speaker at the meeting of the North Carolina Urological Society held at Sedgfield, October 27th. He spoke on the Advancement in Endocrinology Concerning the Prostate, and on Experimental Surgery of the Kidney.

During the meetings of the Southern Medical Association in St. Louis, November 10th to 13th, Dr. David E. Wilson gave the Chairman's Address in the Section on Neurology and Psychiatry, speaking on the subject, The Psychiatrist Looks at War; Dr. Edwin P. Lehman took part in a panel discussion on the Diagnosis of Gastro-Intestinal Diseases; Dr. Dudley C. Smith presented a paper before the Section on Dermatology and Syphilology on The Treatment of Vincent's Infection with Fuadin; Dr. Oscar Swineford spoke on Cottonseed Sensitivity before the Section on Allergy; Dr. Charles J. Frankel presented a paper before the Section on Bone and Joint Surgery on The Palliative Treatment of Irreducible Congenital Dislocation of the Hip.

Lehigh University conferred the honorary degree of Doctor of Science on Dr. Harvey E. Jordan at Convocation on October 3rd.

The School of Surgery and Gynecology has received a grant of \$2,000 from the John and Mary R. Markle Foundation, for support of further investigations on Heparin in relation to peritoneal adhesions and other tissue reactions, under the direction of Dr. Edwin P. Lehman and Dr. Floyd Boys.

Dr. Brock Dear, '08, of Washington, Connecticut, recently retired from active practice in Bronxville, New York, has made a gift of his large collection of obstetrical instruments to the Department of Obstetrics and Gynecology. Dr. Dear, during his student days at the Univer-

sity of Virginia, was befriended by the late Dr. Joseph Bryan, of Richmond, and he has made his gift in grateful remembrance of Dr. Bryan.

Dr. Fletcher D. Woodward spoke before the Roanoke Academy of Medicine on Monday night, December 1st, on the subject, *The Treatment of Malignant Tumors about the Head and Neck.*"

Dr. J. Edwin Wood, Jr., addressed the Mercer Medical Society, Princeton, W. Va., October 9th. His subject was *Anesthesia and the Cardiovascular System.*

At the meeting of the Association of Surgeons of the C. & O. Railway at White Sulphur Springs, on October 25th, Dr. J. Edwin Wood spoke on *The Management of Certain Cardiovascular Conditions Before and After Operation.*

The Neuropsychiatric Society of Virginia held its October meeting in the Amphitheatre of the University Hospital, on the 22nd. Appearing on the program were Dr. William Gayle Crutchfield, University, who spoke on the *Neurosurgical Clinic*; Dr. David C. Wilson, University, whose subject was *Treatment of Various Personality Reactions by Electro-Shock*; Dr. Henry B. Mulholland, University, who spoke on *The Latest Developments in Our Knowledge of Vitamins, with an especial consideration of their relationship to the Central Nervous System*; and Dr. Walter Freeman, Washington, D. C., who conducted a *Clinical-pathological Conference.*

On November 14th Dr. Chester M. Jones, Clinical Professor of Medicine, Harvard University, delivered an address before the Virginia Alpha Chapter of Alpha Omega Alpha. He spoke on *The Influence of the Nervous System on Digestive Tract Symptoms.*

A bequest of \$13,432 has been received from Mr. William E. Hopkins, the income from which is to be used for the purchase of medical books and medical journals for the library and medical school.

The Twenty-eighth Postgraduate Clinic Symposium on Gastro-Enterology was held at the University of Virginia Hospital on Friday and Saturday, November 14th and 15th. Lectures were given by Dr. Porter P. Vinson, Professor of Bronchoscopy, Esophagoscopy and Gastroscopy, Medical College of Virginia; Dr. Julian M. Ruffin, Associate Professor of Medicine, Duke University; Dr. Chester M. Jones, Clinical Professor of Medicine, Harvard University; Dr. T. T. Mackie, Assistant Clinical Professor of Medicine, College of Physicians and Surgeons; Dr. Warren T. Vaughan, Director, Vaughan-Graham Clinic, Richmond, Virginia; Dr. William Osler Abbott, Associate in Medicine, University of Pennsylvania.

Dr. Vincent Archer attended the meeting of the American Roentgen Ray Society at Atlantic City, New Jersey, on November 16th. He was the chairman of the Scientific Exhibit Committee and a member of the Program Committee.

The Eighth Annual Postgraduate Course in Ophthalmology and Otolaryngology was given at the Medical School on the four days, December 2nd to 5th. Lectures were given by Dr. Frank B. Walsh, Associate Professor of Ophthalmology, Johns Hopkins University; Dr. Derrick Vail, Professor of Ophthalmology, University of Cincinnati; Dr. Algernon B. Reese, Attending Surgeon, Institute of Ophthalmology, New York City; Dr. Edward A. Looper, Professor of Diseases of the Nose and Throat, University of Maryland; Dr. Eugene Landis, Professor of Medicine, University of Virginia; Dr. E. P. Lehman, Professor of Surgery, University of Virginia; Dr. Louis H. Clerf, Professor of Laryngology and Broncho-Esophagology, Jefferson Medical College; Dr. Karl M. Houser, Professor of Otolaryngology, University of Pennsylvania; Dr. H. B. Mul-

holland, Professor of Practice of Medicine, University of Virginia; Dr. J. Edwin Wood, Professor of Practice of Medicine; Dr. W. H. Pearson, Orthodontist to the University of Virginia Hospital.

On November 25th Dr. Hugh Hampton Young, Director of the Brady Urological Clinic, Johns Hopkins University Hospital, delivered an address before the Pi Mu Chapter of Phi Chi. He spoke on *The Problems in Prostatic Surgery, and Some Hermaphrodites I have Met and Operations Carried Out to Make Them Happy.*

Dr. Edwin P. Lehman presented a paper before the meeting of the Southern Surgical Association in Pinehurst, North Carolina, on December 9th-11th, on the subject *Annular Pancreas As a Clinical Problem.*

MEDICAL COLLEGE OF VIRGINIA

Dr. P. N. Pastore, of the class of 1934, will join the staff of the college January 1st, 1942, as professor of otolaryngology. Doctor Pastore received his A.B. degree from the University of Richmond before entering medicine. He served two years as an interne in the hospitals of the college and has been at the Mayo Clinic since 1936. In 1939 he received the M.S. degree in his specialty from the University of Minnesota.

The New Jersey Obstetrical Travel Club visited the obstetrical department of the college recently. Dr. H. H. Ware, Jr., associate professor of obstetrics and acting head of the department, acted as host to the visitors. The morning was spent in the hospital division with clinics in the afternoon. The visiting physicians were: Dr. Walter B. Mount, Montclair; Dr. Carl H. Ill, Newark; Dr. Nelson H. Bigelow, South Orange; Dr. Robert A. Mackenzie, Asbury Park; Dr. J. Carlisle Brown, Atlantic City; Dr. Edward G. Waters, Jersey City; Dr. S. A. Cosgrove, Jersey City; Dr. Arthur W. Bingham, East Orange; Dr. Raymond T. Potter, East Orange; Dr. Alfred Meurlin, East Orange; Dr. Everette L. Campbell, New York City, and Dr. Dan Geary, Morristown.

The United States Public Health Service has made a grant of \$6,000.00 for the Saint Philip school of nursing.

Dr. Wortley F. Rudd, dean of the school of pharmacy, recently returned from an extended southern trip.

Dr. Harvey B. Haag, professor of pharmacology, addressed the American Pharmaceutical Manufacturers' Association on the subject of *The Role of Pharmacology in the Development of Medicines*, in Washington on December 8th.

Miss E. Louise Grant, dean of the school of nursing, has returned from a four weeks' tour on a travel grant of the nursing schools of the country, including the University of Toronto.

Recent college visitors have been: President Charles E. Lawall and Dean Edward J. Van Lier, of West Virginia University; Dr. Maurice B. Vischer, professor of physiology, University of Minnesota; Dr. George H. Whipple, Dean of the University of Rochester medical school; Dr. Harlan Horner, secretary of the American Council on Dental Education, and Dr. H. G. Grant, dean of the school of medicine, Dalhousie University, with several associates.

Dr. C. C. Coleman, professor of neurological surgery, Dr. I. A. Bigger, professor of surgery, Dr. Harry J. Warthen, associate professor of surgery, and Dr. Frank S. Johns, professor of clinical surgery, attended the meeting of the Southern Surgical Association, Pinehurst, North Carolina, on December 9th. Doctor Coleman presented a paper on *Treatment of Compound Fractures of the Skull* and Doctor Warthen spoke on *Gas Gangrene*. Dr. Frank Johns was elected vice-president of the association and Dr. H. Page Mauck, professor of clinical orthopedic surgery, was elected to membership in the association.

Dr. William B. Porter, professor of medicine, and Dr. I. A. Bigger, professor of surgery, attended the meeting of the Seaboard Medical Association at Virginia Beach. Doctor Porter read Dr. Bernard Kinlaw's paper at the meeting due to Doctor Kinlaw's untimely death.

Dr. Porter P. Vinson, professor of bronchoscopy, attended the annual meeting of the Alumni Association of the Mayo Foundation recently. His presidential address was *Traditions in Medicine*. Doctor Vinson also gave a paper on *Diagnosis and Treatment of Cardiospasm* at the meeting of the Calhoun County Medical Society, Anniston, Alabama, and another at the symposium on gastro-enterology at the University of Virginia on *Diseases of the Esophagus*.

Dr. C. C. Coleman, professor of neurological surgery, attended the meeting of the Seaboard Air Line Surgeons' Association at Jacksonville, Florida, giving a paper on *Prevention of Infection of Acute Head Injuries*.

Alpha Omega Alpha honorary medical society presented Dr. Edward D. Churchill, John Homans Professor of Surgery, Harvard Medical School, on its annual lectureship. Doctor Churchill spoke on *Some Fundamental Principles underlying Surgery of the Lungs*, in the Simon Baruch Auditorium. Following the afternoon lecture a banquet for initiates was held at the Commonwealth Club.

SYPHILIS IN PRIVATE PRACTICE IN 1938 AND 1940

(C. K. Weil & H. J. Climo, Montgomery, in *Jl. Med. Assn. of Ala.*, Oct.)

	1938	1940
<i>Total number of serologic tests.....</i>	<i>362</i>	<i>615</i>
<i>Whites</i>		
Serologic tests	196	288
Positive	12	12
Percentage	6.1	4.1
<i>Negroes</i>		
Serologic tests	166	327
Positive	57	55
Percentage	27.1	17
Number of spinal fluid examinations....	20	28
Number of darkfield examinations.....	8	10

These figures bring out the following comparisons: 1. There were almost twice as many serologic tests in 1940 as in 1938. 2. The percentage of positives in white patients dropped from 6.1 in 1938 to 4.1 in 1940. 3. The percentage of positives in negroes dropped from 27.1 in 1938 to 17 in 1940. 4. These figures indicate a reduction of the incidence of syphilis in white patients by about 30% and among negroes by about 37%.

This may have been partly due to a greater index of suspicion on the part of the physician, but it certainly suggests a decrease in the incidence of the disease. Such a decrease is probably a result of the syphilis campaign.

A policeman stopped the patient at Hamlet as he was coming to the Sanatorium for an examination. "Take it easy. Don't you see that notice, 'Slow Down Here'?"

Patient: "Yes, officer, but I thought that was just a description of your town."—*Sanatorium Sun*.

A distinguished speaker who had been a patient was asked to address a few remarks to the patients in the auditorium. Beaming with pleasure the great man got up to speak.

"My dear friends," he started, "I will not call you ladies and gentlemen because I know you too well."—*Sanatorium Sun*.

"Was her marital trouble incompatibility?"

"No, just the first two syllables."—*The Chaser*.

BOOKS



MEDICAL CLINICS OF NORTH AMERICA: Military Medicine—November, 1941, Vol. 25—No. 6, 418 pages with 50 illustrations. Paper, \$12.00 per Clinic Year; Cloth, \$16.00 per Clinic Year. *W. B. Saunders Company*, Philadelphia and London.

The Foreword is written by Rear Admiral Ross T. McIntire, Surgeon General, U. S. N. Then follows articles on:

The Physician in Selective Service and the Army; Medical Organization in the Permanent Camp and in the Field; Communicable Diseases and Military Medicine; Cardiovascular Disease and Military Medicine; Medical Abdominal Emergencies; Military Ophthalmology; War Injuries of the Ear, Nose and Throat; Military Dermatology and Syphilology; Nutritional Aspects of Military Medicine; Psychiatric Aspects of Military Medicine; Improvised Dressings and Transportation of the Wounded; X-Ray Examinations of the Chest for the United States Army; Chemotherapy of Acute infections; Management of Shock and Treatment of Burns; Treatment of Minor War Injuries; Disorders of the Foot in Relation to Military Service; and Gastro-intestinal Problems in Military Medicine.

Each of these essays is by a medical officer of the Army or Navy especially qualified to write on the subject assigned him.

Doctors who are in any way participating in the selection of men to wear the uniform and all those others who are interested to know about these important matters will find answers here to many questions that come to mind.

ARTHRITIS IN MODERN PRACTICE, by OTTO STEINBROCKER, B.S., M.D., Assistant Attending Physician and Chief Arthritis Clinic, Bellevue Hospital, Fourth Medical Division, New York City. With Chapters on Painful Feet, Posture and Exercises, Splints and Supports, manipulative Treatment and Operations and Surgical Procedures by JOHN G. KUHN, A.B., M.D., F.A.C.S., Chief of the Orthopedic and Surgical Service, Robert Breck Brigham Hospital; Assistant Visiting Orthopedic Surgeon, Boston Children's Hospital. 606 pages with 321 illustrations. *W. B. Saunders Company*, Philadelphia and London, 1941. Price \$8.00.

The aim is to evaluate the various methods of treatment of arthritis and to provide in one volume the useful procedures not yet to be found in a textbook.

It is pleasing to see that the book is dedicated "To the Patients." Also, it is fitting, for study of its contents will inure to the great benefit of the legion of sufferers from arthritis.

Striking chapter subjects are:

Rheumatic Disorders as a Medico-Social and Economic Problem.

The Painful Shoulder.

The Neuralgias in Rheumatic Disorders.

Pain in Diagnosis and Treatment.

Local and Regional Infections.

Painful Feet.

The book was conceived and written to be of the greatest help to doctors in taking care of the special needs of their arthritic patients. Where it can not offer means of restoring to health, it is careful to offer means of preventing the development of a worse condition, and to describe means of promoting the patient's comfort.

SYNOPSIS OF ALLERGY, by HARRY L. ALEXANDER, A. B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of The Journal of Allergy. Illustrated. *The C. V. Mosby Company*, St. Louis. 1941. \$3.00.

Some time ago an allergist was heard to say to a meeting of doctors that allergy was responsible for more than half of the cases of illness for which the services of doctors were sought. Maybe so. Anyhow, it is encouraging to learn that an authority puts out what he regards as the needful knowledge of this subject in a small book of 200 pages.

It is by the use of books such as this that the general practitioner can diagnose and treat ade-

quately in 80 to 90 per cent of the cases coming to him.

SYNOPSIS OF GENITOURINARY DISEASES, by AUSTIN L. DODSON, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia. Third edition, with 112 illustrations. *The C. V. Mosby Company*, St. Louis. 1941. \$3.50.

The first edition was written with the end in view of supplying medical students and family doctors with a reliable text on urology, containing essential information on all but the highly specialized diagnostic and therapeutic procedures. This end was well served. The second edition followed the same plan, as does this, the third, edition, which the author says is put out largely to give the latest information on the use of new drugs in this field of practice. A book that every doctor in general practice should have.

IMMUNOLOGY, by NOBLE PIERCE SHERWOOD, Ph.D., M.D., F.A.C.P., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas. Second edition, illustrated. *The C. V. Mosby Co.*, 3523-25 Pine Boulevard, St. Louis. 1941. \$6.50.

First the reader's acquaintance with infection and infectious agents is enlarged; then the host-parasite relationship is discussed. Inflammation and leucocyte response, individual resistance, the retic-

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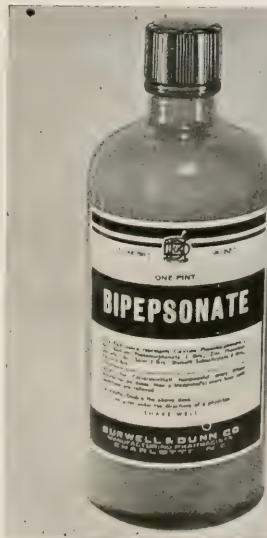


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The whole of the difficult subject is discussed with a degree of clarity and comprehensiveness to make the book one of unusual value.

THE TOXEMIAS OF PREGNANCY, by WILLIAM J. DIECKMANN, M.D., Associate Professor of Obstetrics and Gynecology, The University of Chicago; Attending Physician, The Chicago Lying-in Hospital and Dispensary; Attending Gynecologist, Albert Merrit Billings Memorial Hospital of the University of Chicago; Associate Editor of the American Journal of Obstetrics and Gynecology. Fifty Text illustrations and three color plates. *The C. V. Mosby Company*, St. Louis. 1941. \$7.50.

It is acknowledged that differentiation between the toxemias of pregnancy presents many difficulties. The author declares his intentions in writing the book were two: to acquaint the obstetrician with recent contributions to the physiology of obstetrics; and to acquaint the investigator, untrained

in obstetrics, with some of the physiology and pathology.

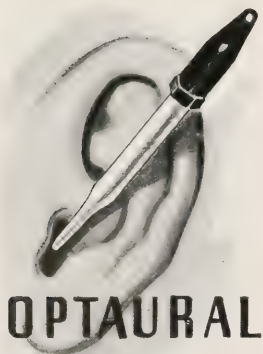
The data compiled convince the author that the toxemias of pregnancy are diseases of civilization, largely amenable to proper prenatal care. The great variation in blood-pressure reports is attributed to the readings being made by persons without proper instruction.

The pituitary and thyroid seem to be associated with toxemia, but the mechanism is unknown. None of the reports of hormone studies has followed patients long enough to confirm the diagnosis as to kind of toxemia. Some patients put on much weight in each pregnancy and may develop edema, but as a rule no other symptoms appear. Water balance, sodium and chloride balance, blood volume and pressure, changes in the endocrine glands, climatic effects and liver disease are given as factors in the development of eclampsia.

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